

**SCREENING SITE INVESTIGATION
PROCTER & GAMBLE WELL #11 SITE
KANSAS CITY, KANSAS**

**EPA Identification Number
KSD007130032**



**Kansas Department of Health and Environment
Bureau of Environmental Remediation
Pre-Remedial Section**

SEPTEMBER, 1991



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ATTACHMENTS

- Attachment 1 - EPA Site Inspection Form 2070-13
- Attachment 2 - Laboratory Analyses

SECTION 1: INTRODUCTION

1.1 Introduction

The Kansas Department of Health and Environment (KDHE) has entered into a cooperative agreement with the Environmental Protection Agency (EPA) under which KDHE will perform investigations of selected contaminated sites in Kansas. The investigations are conducted in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), collectively known as "Superfund". The purpose of the investigations is to determine if sites qualify for listing on the National Priority List (NPL), thus making them eligible for a federally mandated cleanup.

The Procter and Gamble Well #11 Site is located in Kansas City, Kansas in the eastern part of Wyandotte County. Well #11 and another well (#12), are situated southwest of the Procter and Gamble Manufacturing Company (P&G) facility on land leased from the Kansas & Missouri Railway and Terminal Company. Wells #11 and #12 are used alternately to supply water for single-pass process cooling in heat exchangers. The water is discharged to the Kansas City sanitary sewer system. P&G manufactures various types of liquid and solid soaps and detergents, cleaning products, and industrial organic chemicals, and has been in operation since the early 1900's.

Well #11 has been monitored since 1981 as part of the Kansas Groundwater Quality Monitoring Network. KDHE first sampled for volatile organic chemicals (VOCs) on August 12, 1988. The wells contained detectable levels of six VOCs. Two of the compounds (1,1-dichloroethylene and vinyl chloride) were found at levels exceeding Kansas Action Levels (KAL)¹. Additional samples collected from the well soon thereafter confirmed the VOC contamination. A Preliminary Assessment (PA) of the site was completed in 1990 which confirmed a significant groundwater contamination problem.

1.2 Site Problem Statement

Since 1988 there has been persistent groundwater contamination of

¹ In December, 1985 the KDHE issued the final draft of "Program Strategy Addressing Volatile Organic Chemicals (VOCs) in Kansas Groundwater". This document outlined, among other items, the maximum contaminant levels for VOCs in public water supply wells and the guidelines for enforcing these levels. The Kansas Action Level (KAL) is the maximum contaminant level set by the KDHE for public water supplies. All public water supplies in the state of Kansas are required to meet the KAL standards set by the KDHE. Public water supplies not meeting the KAL standards are required to notify their customers of the contamination, and upon review by the KDHE, may be required to discontinue the use of the water source, blend water with other non-contaminated sources, treat the contaminated water, and/or supply an alternate source of water. In addition, the KAL's are used as a guideline to advise private well owners of safe drinking water standards.

the P&G Well #11 by the VOCs 1,1-dichloroethylene (1,1-DCE), 1,2-dichloroethylene (1,2-DCE) and vinyl chloride (VC). Because of this known groundwater contamination, the large nearby population and threat to industrial users of the groundwater, further site work at this location was deemed appropriate and necessary.

1.3 Purpose/Scope of Screening Site Investigation

The PA of the Procter and Gamble Well #11 Site recommended further investigation to determine the extent of groundwater contamination, other possible pollution pathway problems and potential sources of contamination. This medium priority screening site investigation (SSI) was to include a business survey to identify adjacent industrial activities and chemical use and a water well survey to locate additional wells for groundwater sampling. A soil-gas investigation was also recommended to better delineate the extent of the VOC contamination, assist in locating potential sources within and adjacent to the site and assist in the selection of soil sampling locations. In conjunction with the soil-gas investigation and soil sampling, groundwater samples were to be collected from the four wells sampled during the PA and any additional wells identified in the vicinity of the site.

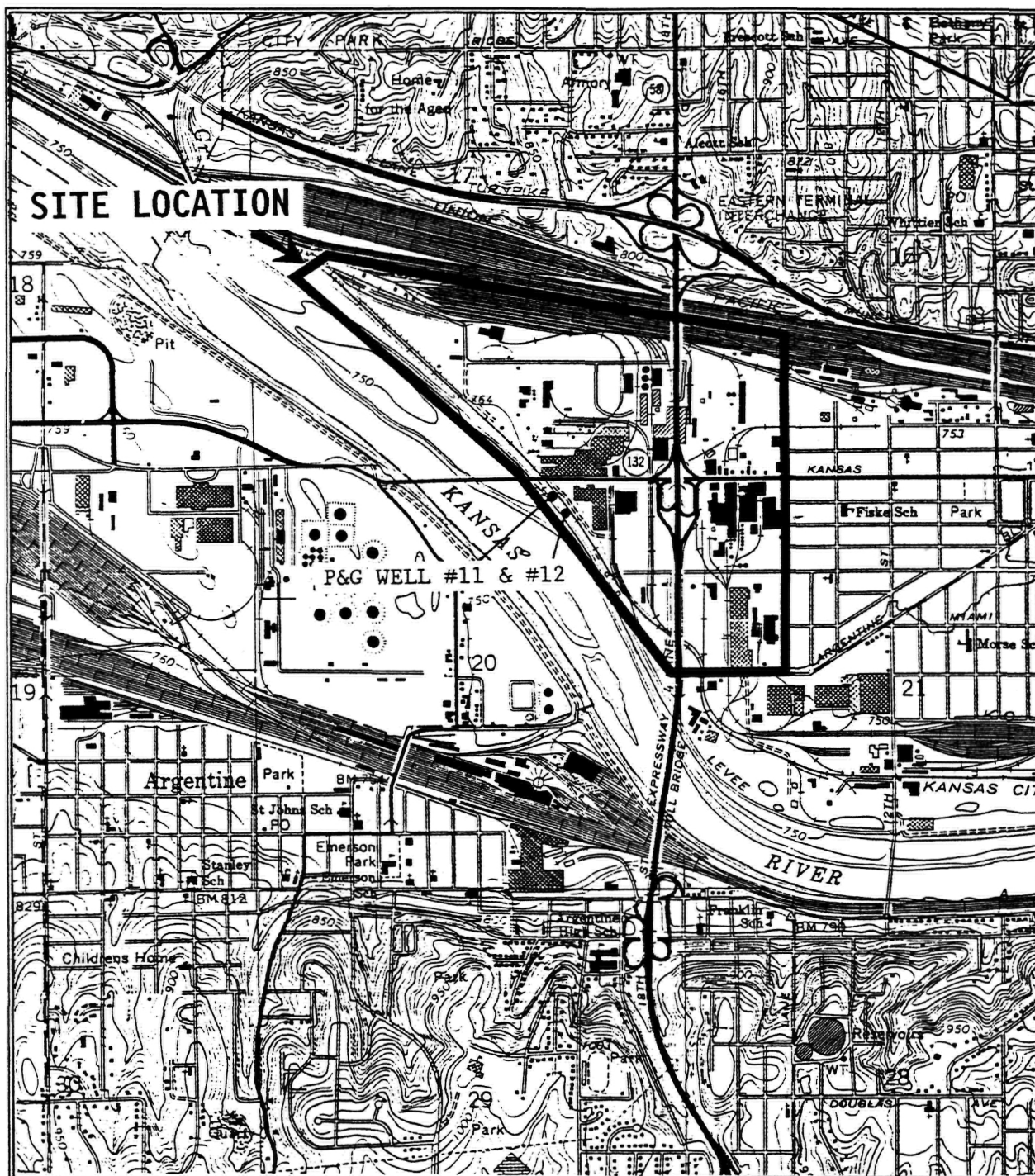
SECTION 2: SITE DESCRIPTION AND REGULATORY HISTORY

2.1 Site Location

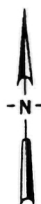
The Procter and Gamble Manufacturing Company facility is located in Kansas City, Kansas, in the eastern part of Wyandotte County. It is in the Armordale Industrial District at 1900 Kansas Avenue, between the Union Pacific railroad yard, which lies to the north, and the Kansas River, which lies to the south and west (Figure 2-1, Site Map). Well #11 is situated southwest of the facility on land leased by Procter and Gamble from the Kansas & Missouri Railway & Terminal Company. The Kansas & Missouri railroad tracks run just north and east of the well, and the Kansas River is west and south of the well (see Figure 2-1). The legal description of the P&G Well #11 site includes portions of Sections 16, 17, 20 and 21 in Township 11 South, Range 25 East. The geographic coordinates of the P&G Well #11 are 39°05'25" North latitude and 94°39'50" West longitude.

2.2 Site Description

The regional topography consists of rolling uplands in the divide between the Kansas and Missouri Rivers. The site is located on the relatively flat terrain of the Kansas River Valley floodplain.



**FIGURE 2-1
SITE MAP**



1 INCH = 2000 FEET
SCALE

SOURCE: USGS 7.5' SHAWNEE QUAD., 1964, PHOTOREVISED 1975

SCREENING SITE INVESTIGATION - PROCTER & GAMBLE WELL #11 SITE
SEPTEMBER, 1991

The SSI site encompasses the area originally delineated by the PA and is bordered on the north by the Union Pacific railroad yard, 14th Street on the east, Argentine Street on the south and the Kansas River on the west and southwest (Figure 2-1).

2.3 Site History

The Procter and Gamble (P&G) Manufacturing facility has been in existence since the early 1900's. The first P&G water supply well was constructed in 1919 and it has historically used a considerable amount of groundwater for industrial cooling purposes. To meet its needs P&G added five additional wells to its well field in 1952, including wells #11 and #12. These wells were constructed directly south of the facility on property currently owned by the Kansas & Missouri Railway & Terminal Company. By 1979 only wells #11 and #12 remained in use. Wells #11 (the primary well) and #12 (the backup well) presently provide approximately 40% of P&G water needs. The remaining 60% is purchased from the Board of Public Utilities, Wyandotte County (KDHE/BoW, Industrial Programs Section, P&G files).

In January 1977, BER records indicate an epichlorohydrin leak of 2,500 gallons from an underground pipeline to an above ground storage tank at the P&G facility. Only 200 gallons of the material was recovered. Some 1,500 cubic feet of soil were removed at the time. An additional 300 to 600 pounds of epichlorohydrin were released into the sewage system in August 1977 (KDHE/BER, Spill Report files). There have been irregular reports of spills and of suds and foaming effluent problems from the Procter & Gamble facility and from the adjacent Colgate-Palmolive plant over the years. (KDHE/BoW, Industrial Programs Section, P&G files).

As part of the Kansas Groundwater Quality Monitoring Network, P&G Well #11 was first sampled for VOC analysis on August 12, 1988. Six VOCs were detected in the sample: vinyl chloride, 1,1-dichloroethylene (1,1 DCE), 1,2-dichloroethylene (1,2 DCE), 1,1-dichloroethane (1,1 DCA), 1,2-dichloroethane (1,2 DCA), and benzene (KDHE/BER, P&G Well #11 Site Files). Of those contaminants, vinyl chloride, 1,1 DCE and 1,2 DCE were found at substantial concentrations in the groundwater sample. Additional sampling was conducted on August 25, 1988, by Quality Analytical Services (QAS), a private environmental laboratory hired by P&G to sample well #11. Possibly due to improper collection procedures, the QAS analysis revealed the presence of only three of the six VOCs detected in the earlier sample (vinyl chloride, 1,1 DCE, and 1,2 DCE), all at significantly lower levels. The KDHE resampled the well on September 23, 1988. The same six VOCs present in the August 12th sample were detected. The levels detected corresponded to the higher concentrations of first sample (KDHE/BER, P&G Well #11 Site Files).

On May 12, 1989, an industrial inspection was conducted at the P&G facility as part of the EPA audit of the Kansas City pretreatment program (KDHE/BoW, Industrial Programs Section, P&G files). The audit noted that P&G's average of 500,000 gallons per day of process wastewater containing surfactants, foaming agents and possible high chlorides adversely affected the city's Kaw Point wastewater treatment plant, and may have caused the city to exceed its National Pollutant Discharge Elimination System (NPDES) limits.

2.4 Summary of Preliminary Assessment

The Preliminary Assessment indicated that groundwater in the vicinity of the Procter and Gamble Manufacturing facility and well field was contaminated with 1,1-DCE, 1,2-DCE, TCE, and vinyl chloride at levels which exceed standards for public drinking water supplies. Other VOCs (PCE, 1,1-DCA, and 1,2-DCA) were detected at lower levels. Analytical results showed that concentrations of many of the VOCs were significantly higher in groundwater from Wells #11 and #12 than from the monitoring wells located somewhat upgradient inside the facility premises (KDHE/BER, P&G Well #11 Site PA Report, 1990). The VOC concentrations detected in the 1990 samples had declined from the 1988 concentrations.

Inorganic analyses of the groundwater samples revealed that the groundwater was highly mineralized with high concentrations of iron, manganese, sulfate and total hardness.

Groundwater use within the target area is limited to industrial purposes on the Kansas side. Some contact with humans is possible, although no drinking water use was identified for groundwater in the area.

SECTION 3: OPERATIONAL HISTORY AND WASTE CHARACTERISTICS

3.1 Operational History

The Eighteenth Street Expressway, running north and south through the site, and Kansas Avenue (Kansas Highway 132), running east and west, define four quadrants that can be used to better describe and analyze the site.

The northwest quadrant comprises:

- the original Preliminary Assessment (PA) site
- Procter and Gamble complex, 19th & Kansas Avenue
- Metro Tow, Inc., a tow and salvage business since 1978 located at 452 S 26th, which was formerly a farm
- B & H Freight Line, Inc., a trucking firm for 3½ years (as was the former Wintz Corp.) at 468 S. 26th Street
- Trimodal, Inc., which stores and repairs containers, located on Southern Pacific Railroad lease property at 2530 Bayard Ave

- **Southern Pacific Transportation Company**, intermodal railyard operations include **KRJ Trailer Service** and **PARSEC**, a subsidiary of Budco Group, Inc. at 1948 Bayard Street
- several abandoned grain elevators. The elevators were built in 1904, 1906, 1908, 1925, 1931. (*Sanborn Map, 1908 and 1931*).
- **American Ingredients Company** facility was built in 1914 and manufactures food products for-baking at 550 South 18th Street.

Hazardous materials use in those facilities was identified as follows: PARSEC uses about five gallons safety solvent, Trimodal Inc. uses rubberized enamel and American Ingredients maintains 30 gallons of solvents which are changed monthly (*KDHE/BER, P&G Well #11 Site files*), and also discharges phosphoric acid into the sanitary sewer (*KDHE/BoW, Industrial Programs Section, P&G files*). Procter and Gamble has been discharging effluent into the Kansas River since 1903. In the mid-1960's the primary discharges included cooling water, sodium chloride and sulfides. By the 1970's most of the processing wastewaters were high in biological oxygen demand, with a pH of 5.5 to 9.5. The effluent contained of sulfides, surfactants, oil and grease, and copper. This discharge is processed by the City Treatment Plant. (*KDHE/BoW, Industrial Programs Section, P&G files*).

The northeast quadrant comprises:

- **Smoot Grainery** which was shut down in 1990
- the former **Concrete Materials Inc.** concrete plant built in 1915 and purchased in 1990 by the **PQ Corporation**, an industrial chemical manufacturer at 1700 Kansas Avenue;
- a series of small businesses just to the north and along Kansas Avenue and 14th Street. These businesses, traveling from west to east are:
- **Lite Weight Products, Inc.**, ten year residents of 1706 Kansas Avenue, and a perlite manufacturer on a site formerly used for battery manufacturing by American Battery
- **Missouri Metals Protection Plating (MMPP) Corp.**, a six year old metal plating business (formerly Acme Plating), at 1630 Kansas Avenue
- **Helmut Paint and Body Shop** located at 1452 Kansas Avenue for 3½ years, formerly the site of a body shop since 1949
- **TRAQ** warehousing, a former beer distribution location at 1444 Kansas Avenue
- **Kansas Entertainment** (a tavern) at 1436 Kansas Avenue
- **TRAFTEC** - Contractors Traffic Protection Co., Inc. has resided at 1420 Kansas Avenue since 1983 which was formerly the site of an APCO service station
- **Pro Stop**, a trucking firm located at 1400 B Kansas Avenue for 6 years (formerly Southwest Motor Freight)

- **Detco Trailer** (formerly Dart Transit) a tractor and trailer repair at 508 S 14th Street for 5½ years (KDHE/BER, P&G Well #11 Site file).

The MMPP Corp and the PQ Corporation are registered RCRA generators (KDHE/BAWM, RCRA files). Right-To-Know files note that the MMPP Corp uses nearly 30 different chemicals while the PQ Corporation uses approximately 50. None appear to be directly related to the contamination detected at the site (KDHE/BEHS, R-T-K files). The PQ Corp. discharges approximately 1.6 million pounds of ammonium nitrate, 57,634 pounds of ammonia, 7,955 pounds of nitric acid as well as hydrochloric acid annually into the sanitary sewer (KDHE/BoW, Industrial Programs Section, PQ Corp. files). Helmut Paint and Body, Traftec and Detco Trailer use paints, thinners and some solvents (KDHE/BER, P&G Well #11 Site files).

The southeast quadrant is comprised of Colgate-Palmolive (C-P) facility and several other industries:

- **Colgate-Palmolive**, at 1806 Kansas Avenue, has manufactured soaps and detergents at this site since the turn of the century.
- For seven years the **Kansas City Railcar Service, Inc.** has painted and repaired rail cars at 1616 Argentine Blvd (a former pipe yard)
- Since 1955, **Food Barn** (formerly Safeway), has handled produce and packing salvage at 844 S. 14th St.
- Private residences are located to the east of this quadrant of the site (KDHE/BER, P&G Well #11 Site files).

Colgate-Palmolive is a registered RCRA generator (KDHE/BA&WM, RCRA files). C-P uses at least 30 different chemicals including tin tetrachloride solution (KDHE/BEHS, R-T-K files). C-P has a spill containment pond which can be released into the sanitary sewer. Sulfonates, phenols and cooling water are the primary registered effluent discharges of C-P (KDHE/BAWM, RCRA files). Residences and Fiske School are to the east, while additional facilities for Food Barn and the **Walnut Factory** lie to the south of the site and Argentine Blvd. C-P wells 6A, 7A and 9A are in this quadrant.

The southwest quadrant comprises:

- **Midwest Gases, Inc.**, a compression plant for gas cylinders (oxygen, argon, nitrogen, helium, carbon dioxide, nitrogen, propylene, propane and acetylene) at 1900 Osage
- **Kansas City, Kansas Board of Public Utilities (BPU)**, **Kaw Power Station**, generates electricity and hazardous wastes at 2015 Kansas Avenue
- **Inland Container Corp.** (formerly International Paper), processes and handles paper and boxes at 2101 Kansas Ave. (KDHE/BER, P&G Well #11 Site files and KDHE/BAWM, RCRA files).

The Kansas River and the Kansas & Missouri Railway & Terminal Company railroad spur lie to the south and west of this quadrant.

There are wells and a surface water intake structure used by the Kaw Power Station are located in this quadrant (KSBA/DWR, 1991). The wells are Procter and Gamble wells #11 and #12 and a well at Midwest Gases. The Kansas City BPU discharges chlorine, nitrates, nitrogen, phosphorus, aluminum, barium boron, iron and fluorides to the river or sanitary sewer (KDHE/BAWM, RCRA files). Inland Container Corp. also uses several chemicals which do not seem to be related to the contamination problem at the site (KDHE/BA&WM, RCRA files).

3.2 Sampling Strategy

As a result of the business and water well surveys conducted April 30 and May 1, 1991, four additional water supply wells were discovered or identified in the vicinity of the P&G Well #11 site: three unused industrial supply wells at the Colgate-Palmolive facility (wells 6A, 7A and 9A) and an industrial well at the Mid-West Gases facility. Three of these wells and the abandoned well formerly used by the Builders Sand Co. facility were sampled during the SSI in addition to the four P&G wells sampled during the 1990 PA.

A limited soil gas survey was conducted at the site in order to determine if contamination sources were located upgradient of the P&G facility, and to locate other potential source areas. Groundwater and soil gas sample locations and analytical results are discussed in Section 4 below.

3.3 Waste Characteristics

The hazardous substances detected at the site are classified as volatile organic chemicals (VOCs). VOCs are common ingredients in many chemicals which are used for household, industrial and agricultural purposes, particularly solvents and fumigants. They may seep into the groundwater as the result of improper application or disposal practices. Toxicological studies have indicated that long term exposure to excessive levels of some VOCs may cause cancer and other health problems. Ten different VOCs have been detected in groundwater at the site since 1988. Two additional VOCs were detected in soil-gas samples collected during the SSI. Table 3-1 summarizes the twelve VOCs detected at the site.

TABLE 3-1
Summary of Detected VOCs
Procter and Gamble Well #11 Site
Kansas City, Kansas

| <u>VOC</u> | <u>Abbreviation</u> |
|----------------------|---------------------|
| Benzene | |
| Carbon Tetrachloride | |
| Chloroform | |
| 1,1-Dichloroethane | 1,1-DCA |
| 1,2-Dichloroethane | 1,2-DCA |
| 1,1-Dichloroethylene | 1,1-DCE |
| 1,2-Dichloroethylene | 1,2-DCE |
| 1,4-Dioxane | |
| Tetrachloroethylene | PCE |
| Trichloroethylene | TCE |
| Toluene | |
| Vinyl Chloride | VC |

Source: KDHE/BER, P&G Well #11 Site files.

The primary contaminants at the P&G site are 1,2 DCA, 1,1 DCE, 1,2 DCE, TCE, and VC. Their major characteristics are described below.

1,1-Dichloroethylene

Also known as 1,1-dichloroethene, vinylidene chloride and 1,1-DCE.

Chemical Abstract Service Registry (CAS): 75-35-4.

Patented in 1961 by Eythyl Corp, 1,1-DCE is a mild, sweet smelling (like chloroform), colorless liquid produced by the dehydrochlorination of 1,1,2-trichloroethane. It is only slightly soluble in water and readily polymerizes. It is used as an intermediate in the production of "vinylidene polymer plastics" such as Saran and Velon; used in adhesives; and as a component of synthetic fibers. (Merck, Ninth Edition 1976, Sax & Lewis, 1987)

1,2-Dichloroethylene

Also known as acetylene dichloride, dichloroacetylene, 1,2-dichloroethene and 1,2-DCE. CAS: 540-59-0.

Patented in 1950 by du Pont 1,2-DCE is a ethereal, slightly acrid smelling, colorless liquid that gradually decomposes in air, light and moisture, forming hydrochloric acid. It is used for processing of fats, phenol, camphor; for retarding fermentation (Merck, Ninth Edition 1976); rubber manufacturing; as a refrigerant, as an additive to dye and lacquer solutions; as a low temperature solvent for heat sensitive substances (like caffeine); constituent of perfumes, thermoplastics, and in organic synthesis and medicine, dye extraction, and thermoplastics (Sax & Lewis, 1987).

Vinyl Chloride

Also known as chloroethene, chloroethylene, VC. CAS # 75-01-4.

Patented in 1959 by National Distillers and Chemical Corp., VC is a colorless compressed gas, easily liquified, with an ethereal odor that is prepared from ethylene dichloride and alcoholic potassium or by halogenation of ethylene. It is used in the plastics industry, as a refrigerant and in organic synthesis (Merck, Ninth Edition 1976). VC was the 19th highest volume chemical produced in the U.S. in 1985 (Sax & Lewis, 1987)

Trichloroethylene

Also known as acetylene trichloride, trichloroethene; ethylene trichloride, TCE. CAS # 79-01-6.

Patented in 1946 by du Pont, TCE is a colorless liquid that smells similar to chloroform that is derived from tetrachloroethane by eliminating hydrochloric acid. It is used as a solvent for fats, waxes, resins, oils, rubber, paints and varnishes; cellulose esters and ethers; solvent extraction in many industries; degreasing in dry cleaning and manufacturing organic chemicals including pharmaceuticals like chloroacetic acid. It is practically insoluble in water and slowly decays (with the formation of hydrochloric acid) by the action of light in the presence of moisture (Merck, Ninth Edition, 1976).

1,2-Dichloroethane

Also known as 1,2-DCA, sym-dichloroethane, ethylene dichloride, Dutch Oil. CAS #107-06-2

1,2-DCA is a colorless, oily liquid with chloroform-like odor and sweet taste derived from chlorine and ethylene or acetylene and hydrochloric acid. Slightly soluble in water, resists oxidation and is stable in water, alkalies, acids, or active chemicals and does not corrode metals. It is used to produce vinyl chloride, trichloroethylene, vinylidene chloride and trichloroethane; as a lead scavenger in antiknock gasoline; paint varnish, and paint removers; metal degreasing, soaps and scouring compounds, wetting and penetrating agents, organic synthesis, ore flotation, fumigant (Sax & Lewis, 1987); solvent for fats, oils, waxes, gums, resins, particularly rubber and manufacturing acetyl cellulose, tobacco

extract. (Merck, Ninth Edition, 1976). 1,2-DCA was the 14th highest volume chemical produced in the U.S. in 1985 (Sax & Lewis, 1987).

3.4 Potential Source Areas

Procter and Gamble uses solvents in its manufacturing processes. Historical blueprints of the P&G facility show a solvent unloading area and a solvent trap (Godfrey, 1990). During the PA, it was observed that small containers of lubricant and/or solvent materials were kept at the wellheads of both Procter and Gamble wells #11 and #12. These materials had been removed at the time of the 1991 site visit. Wellhead protection at each well was poor, with cracks in the concrete pump bases and evidence of spilled oil.

Other potential sources identified during the business survey. The abandoned elevators and mills used fumigants and related compounds. The railroad yard to the north has most likely been the site of a spills and leaks of numerous chemicals since the turn of the century. There is limited solvent use at several auto maintenance and paint shops to the east of P&G in the northeast quadrant of the site. Paints and cleaning related products are used by the Kansas City Railcar Service, Inc. in the southwest quadrant of the site. However, there is not information to show a direct pathway for transport of contaminants from those sites.

The principal sources appear to be near the P&G facility and may include the railroad yard to the north. Original RCRA inspection reports show the use of PCE by Colgate-Palmolive prior to 1980 (KDHE/BAWM, RCRA files) which suggests that P&G may have used PCE at an earlier date for similar products and processes. The Colgate-Palmolive Well #9A sample showing groundwater containing 1,2-DCA suggests a separate source of contamination. American Ingredients uses chloroform in their processes and may be a potential source (KDHE/BAWM, RCRA files).

SECTION 4. FIELD ACTIVITIES AND ANALYTICAL RESULTS

4.1 Introduction

A business survey was conducted by Dan C. Cooper, Environmental Technician and Jim Cook, Environmental Technician on April 30th and May 1, 1991. Sampling and other field related activities were performed at the Procter and Gamble Well #11 site on May 14 through May 16, 1991 by KDHE personnel: Pam Chaffee, Environmental Geologist and team leader; James Alldritt, Geologist; Jim Cook, Environmental Technician, and Scott Nightingale, Environmental Technician.

Eight wells were sampled and one soil sample was collected during the May 14-16, 1991 site visit. All samples were submitted for analysis to the Kansas Health and Environmental Laboratory on May 20, 1991. All groundwater samples submitted were analyzed for VOCs. Samples collected from C-P wells 6A and 9A and the Mid-West Gases well were also analyzed for pesticides, polychlorinated biphenyls (PCBs), base neutral and acid extractable organic compounds (BNAs), and selected inorganic constituents (including heavy metals). The soil sample was analyzed for VOCs and BNAs.

All wells sampled were tagged with state identification numbers. Static water levels were measured in the P&G monitoring wells and the abandoned well. Field sampling information was documented in field notes and the field notebook.

4.2 Site Contacts

Tom Godfrey, Plant Environmental Manager, Procter and Gamble, provided background information and access to P&G wells and property, and collected split samples from the four P&G wells.

Lester Leighty, Regulatory Compliance Coordinator, Colgate-Palmolive, provided background well information and assisted in collecting groundwater samples from the C-P wells.

Leo Riggs, Plant General Manager, Inland Container, provided consent to conduct soil-gas surveying at two locations on Inland Container property.

Mike Carpenter, Environmental Engineer, Kansas City Southern Railway Company, provided consent to access railroad property during the investigation.

Addresses and phone numbers for these contacts are provided in Attachment 1.

Several additional contacts were established for other industries and businesses in the site area (KDHE/BER, P&G Well #11 Site files).

4.3 Groundwater Sampling

Eight groundwater samples were collected from five industrial wells (P&G wells #11 and #12, C-P wells #6A and #9A, and Mid-West Gases well), one abandoned industrial well and two monitoring wells (P&G EPI wells 1 and 2). Samples from three wells (C-P wells #6A and #9A and Mid-West Gases) were filtered and preserved for heavy metal analysis. Samples from the C-P wells were unavoidably aerated during sample collection due to the high discharge rate of the pumps (KDHE/BER, P&G Well #11 Site SSI field notes, 1991).

Figure 4-1 shows the groundwater sampling locations. Results from the laboratory analyses of these samples are summarized in Tables 4-1 and 4-2. Copies of the original laboratory results are included in Attachment 2.

Analytical results of the SSI investigation indicate that concentrations of vinyl chloride, 1,1-DCE and 1,2-DCE had increased in the P&G Wells #11 and #12 since the PA in 1990. Vinyl chloride and 1,1-DCE were at levels which exceeded drinking water standards by as much as 15 and 100 times, respectively. The four VOCs (1,1-DCE, 1,2-DCE, PCE and TCE) detected in the P&G monitoring wells had also increased in concentration. Only 1,1-DCE (in both wells) and TCE (in EPI well #2) were at levels exceeding drinking water standards.

1,1-DCE was not detected in either Colgate-Palmolive well (#6A and #9A). 1,2-DCA was detected at a level twice the KAL in the C-P Well #9A, while low concentrations of 1,2-DCE, and benzene were also detected. Only trace concentrations of benzene and toluene were detected in the C-P Well #6A.

No VOCs were detected in the groundwater sample collected from the well at the Mid-West Gases facility and only a trace amount of toluene was detected in the abandoned well in the northwest portion of the site.

Benzoic acid was detected in both C-P wells and the Mid-Gases well. However, none of the concentrations detected were of concern.

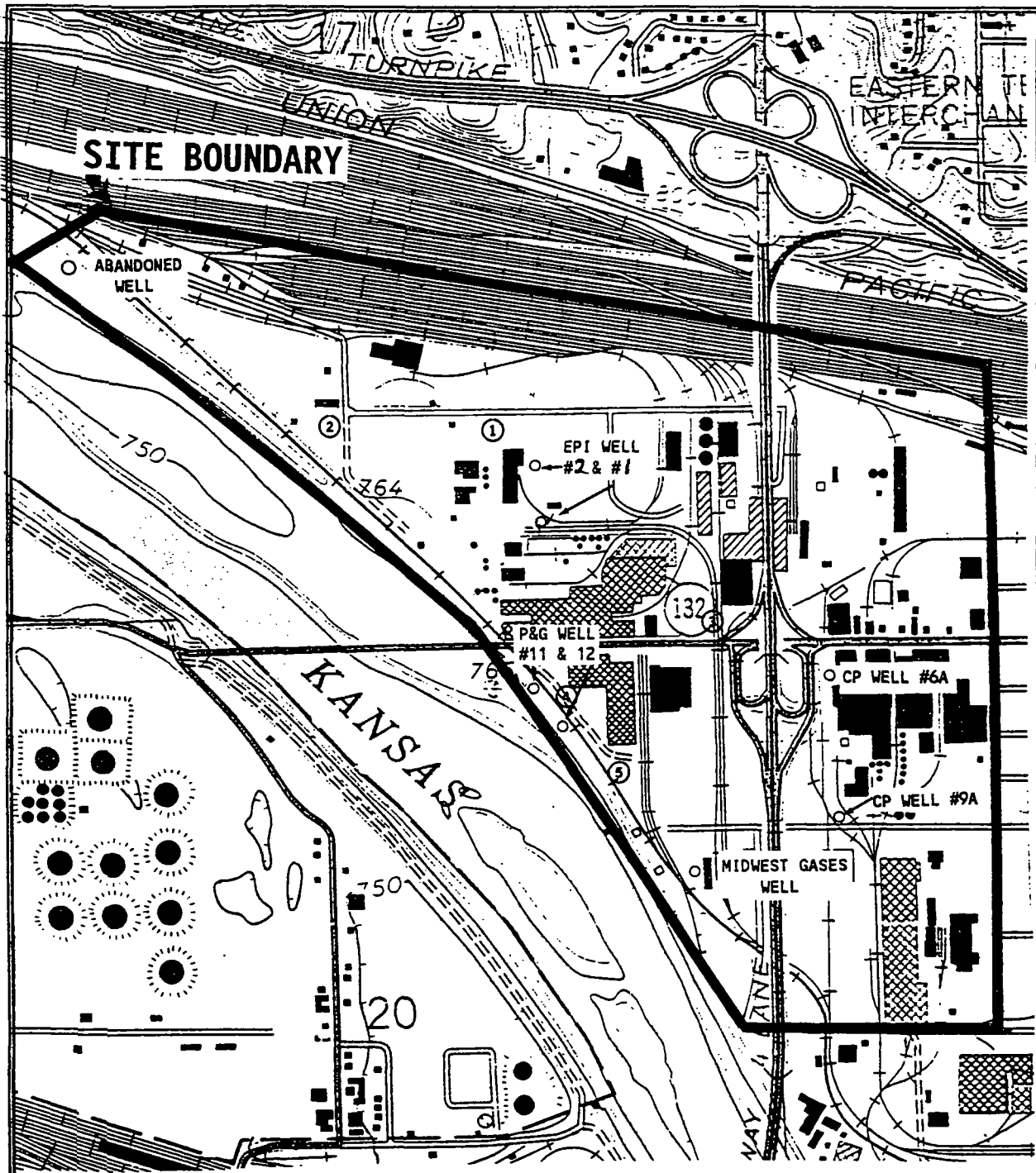
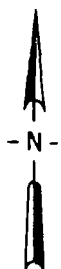


FIGURE 4-1 SAMPLE LOCATION MAP



SCALE
1 INCH = 1000 FEET

LEGEND

- ⑦ = Soil Gas Probe
- = Groundwater Sample

SOURCES: USGS 7.5' SHAWNEE QUAD., 1964, PHOTOREVISED 1975
KDHE/BER, Procter & Gamble #11 Site SSI Field Notes, 1991.

SCREENING SITE INVESTIGATION - PROCTER & GAMBLE WELL #11 SITE
SEPTEMBER, 1991

4.4 Soil-Gas Survey

The soil-gas surveying was carried out on May 15th and May 16th at the P&G and Inland Container facilities to better delineate potential source areas and determine the extent of the contamination. Figure 4-1 shows the locations of the soil-gas probes. Results from the 1 site analysis of these soil-gas samples are summarized in Table 4-3.

Soil-gas probe location #1 (SG Probe #1) was near a former solvent unloading area at the P&G facility. Traces of PCE were detected in soil gas at each depth sampled.

No VOCs were detected at SG Probe # 2. This probe location was situated in the northwest portion of the P&G facility, downgradient of a trucking facility and an automotive salvage yard.

SG Probe #3 was located between the P&G facility, the old grain elevators and other businesses and industries located along the eastern boundary of the site's northwest quadrant. DCE (1,1 and 1,2 DCE combined) and chloroform were only detected in the 36 foot interval sampled.

SG Probes #4 and #5 were situated near P&G Wells #11 and #12 on Inland Container property. Only a trace of chloroform was detected at the nine (9) foot depth at Probe #4. Chloroform and carbon tetrachloride were detected at all intervals sampled of Probe #5 (9, 15, and 30 feet). Traces of DCE and TCE were detected at the 9 and 15 feet intervals, respectively.

4.5 Soil Sampling

A soil sample was collected from a depth of 18 feet at the soil gas sample location #5 at Inland Container and analyzed for VOCs and BNAs, but none were detected.

TABLE 4-1
May 1991, Groundwater, Organic Analytical Data
Procter & Gamble Well #11 Site
Kansas City, Kansas
(units in ug/l)

| VOC | P&G WELL #11 | P&G WELL #12 | P&G EPI MW #1 | P&G EPI MW #2 | COLG-PALM WELL #6A | COLG-PALM WELL #9A | ABANDONED WELL | MID-WEST WELL | KAL |
|---------|-----------------|-----------------|------------------|------------------|-----------------------|-----------------------|-------------------|------------------|------|
| VC | 30.9 | 2.3 | ND | ND | ND | ND | ND | ND | 2 |
| 1,1-DCE | 469 | 578 | 7.0 | 36.1 | ND | ND | ND | ND | 5 |
| 1,2-DCE | 34.1 | 1.2 | 5.5 | 12.7 | ND | 1.0 | ND | ND | 70 |
| 1,2-DCA | ND | ND | ND | ND | ND | 10.1 | ND | ND | 5 |
| PCE | ND | ND | ND | 3.0 | ND | ND | ND | ND | 5 |
| TCE | ND | ND | 3.2 | 9.1 | ND | ND | ND | ND | 5 |
| BENZENE | ND | ND | ND | ND | 0.6 | 1.2 | ND | ND | 5 |
| TOLUENE | ND | ND | ND | ND | 0.5 | ND | 0.5 | ND | 2000 |
| ACIDS | | | | | | | | | |
| BENZOIC | NA | NA | NA | NA | 3.3 | 2.8 | NA | 3.7 | - |

Abbreviations:

VOC - volatile organic chemicals
P&G - Procter & Gamble
EPI - Epichlorohydrin
MW - Monitoring well
Colg-Palm - Colgate-Palmolive
KAL - Kansas Action Level

- - No KAL has been established
ND - Not detected
NA - Not analyzed
VC - Vinyl Chloride
1,1-DCE - 1,1-Dichloroethylene
1,2-DCE - 1,2-Dichloroethylene

1,2-DCA - 1,2-Dichloroethane
TCE - Trichloroethylene
PCE - Tetrachloroethylene
ACID - Acid extractable organic
BENZOIC - Benzoic acid

Source: Kansas Health and Environmental Laboratory, Analytical Data, 1991.

Table 4-2
May 1991, Groundwater, Inorganic Analytical Data
Procter & Gamble Well #11 Site
Kansas City, Kansas
(units in mg/l²)

| INORGANICS | MID-WEST GASES WELL | COLG-PALM WELL #6A | COLG-PALM WELL #9A | KAL |
|-------------|------------------------|-----------------------|-----------------------|-------|
| TOTAL HARD. | 241 | 646 | 595 | 400 |
| SODIUM | 45.224 | 113.898 | 175.738 | 100 |
| MANGANESE | 0.025 | 1.090 | 0.924 | 0.05 |
| THALLIUM | 0.02 | LT 0.015 | LT 0.015 | 0.013 |

Abbreviations:

Colg-Palm - Colgate-Palmolive

KAL - Kansas Action Level

LT - Less than

Source: Kansas Health and Environmental Laboratory, Analytical Data, 1991

²The units commonly used throughout this report for liquid samples (water, wastewater) are either parts per billion (ppb), which are equivalent to micrograms per liter (ug/L), or parts per million (ppm), equivalent to milligrams per liter (mg/L).

Table 4-3
Soil-Gas Survey Summary
Procter & Gamble Well #11 Site
Kansas City, Kansas

| <u>Soil-Gas Survey Location</u> | <u>Depth (in feet)</u> | <u>VOC detected</u> |
|-------------------------------------|----------------------------|-------------------------|
| 1 | 6 | PCE |
| | 9 | PCE |
| | 15 | PCE |
| | 24 | PCE |
| 2 | 9 | None |
| | 15 | None |
| | 30 | None |
| 3 | 9 | None |
| | 15 | None |
| | 36 | DCE & Chloroform |
| 4 | 9 | Chloroform |
| | 15 | None |
| | 30 | None |
| 5 | 9 | Carbon tet(*) |
| | | Chloroform, DCE |
| | 15 | Carbon tet (*) |
| | 30 | Chloroform, TCE |
| | | Carbon tet (*) |
| | | Chloroform |

Abbreviations:

VOC = volatile organic chemical
PCE = Tetrachloroethylene
TCE = Trichloroethylene
DCE = Dichloroethylene (1,1- and 1,2-DCE combined)
Carbon tet = Carbon tetrachloride

* Doubt exists as to the identification of this VOC

Source: Nightingale, 1991

4.6 Quality Assurance and Quality Control

The quality of the data collected for this investigation was protected by the use of equipment and protocols which are typical for environmental investigations. Equipment was decontaminated by washing with a mild soap and water, followed by rinsing with distilled water and air drying prior to its next use. EPA approved sampling procedures, sample handling, preservation techniques were observed for all samples. A trip blank prepared by the KDHE laboratory accompanied the groundwater samples during storage and shipment. No VOCs were detected in the trip (field) blank (refer to Attachment 2). Sample sites where contamination was detected may be resampled in the future to ensure reliability of the data.

All field observations and samples were documented at the site by the field team in a field book and in separate field notes. All samples were tracked and documented by standard KDHE laboratory procedures. Chain-of-Custody forms were maintained for samples collected during this investigation. Groundwater samples and the soil sample collected during this investigation were submitted to the Kansas Health and Environmental Laboratory for analysis.

SECTION 5. CHARACTERIZATION OF CONTAMINATION

5.1 Pathway Characteristics

In performing a hazardous waste investigation, it is necessary to consider the pathways by which contaminants may cause harm to human health and the environment. The pathways generally evaluated are groundwater, surface water, air, and direct contact with hazardous waste. This section will review these pathways and evaluate the relative hazards associated with each.

5.1.1 Groundwater

Use of groundwater within a four mile radius of the site is limited predominantly to industrial purposes. Water well records indicate that wells used for drinking serve less than 20 persons within four miles of the site (KDHE/KWDB, 1990). Groundwater in the region is also used for drinking water, industrial, and agricultural purposes.

The principle source of groundwater in the vicinity of the site is the unconsolidated sand and gravel deposits, or alluvium, in the

Kansas River Valley. The alluvium is composed largely of slightly sandy silt and clay underlain by sand and gravel interbedded with lenses of silt and clay. The alluvium ranges in thickness from approximately 60 to 100 feet and is underlain by shale and limestone of Pennsylvanian age (*Fishel, 1948; KDHE/BoW, Water Well Records*). Wells #11 and #12 are located near the Kansas River and penetrate a greater thickness of alluvial material. Each is approximately 98 feet in depth.

The general direction of groundwater flow is to the south-southwest toward and discharging into the Kansas River.

Historically, a considerable quantity of groundwater had been used at Procter and Gamble and other industries in the vicinity of the site (*Fishel, 1948*). Overdevelopment of the alluvial aquifer in this area caused a cone-of-depression to form in the water table, significantly changing, and in some areas reversing, the direction of groundwater flow (*Fishel, 1948 and Fader, 1974*) (refer to Figure 4A, Geologic Map in the PA report for the site). Today considerably less groundwater is pumped from the alluvium in this area (*KSBA/DWR, 1991*), reducing the effect on the water table.

Groundwater in the alluvium in the Kansas River Valley is very hard and contains large amounts of iron. In the vicinity of the site, the groundwater is also known to contain higher levels of chloride and sulfate than in other areas of the alluvial valley (*Fishel, 1948*). The mineralized quality of groundwater in the alluvial aquifer reduces its potential use in many industrial processes. P&G and C-P have both reduced their dependency upon groundwater because of easier accessibility to the 'softer' municipal water supply (*Leighty, 1991*).

5.1.2 Surface Water

The Kansas River is the only surface water route in the immediate area of the site. It flows in a southeasterly direction approximately 400 feet southwest of Procter and Gamble's Well #11 (Figure 4-1). The Kansas River empties into the Missouri River at a point approximately six river miles northeast of the site. The Kansas River provides recharge or discharge to the alluvial aquifer depending upon seasonal fluctuations of the river stage.

Along the west boundary of the Procter and Gamble facility and well field is a flood control levee which runs parallel to the Kansas River, separating the site from the river (Figure 4-1). North of the site approximately 2,000 feet is a high bluff of Pennsylvanian shale and limestone rising above the river valley. These two features cause localized surface water runoff to be directed toward the Union Pacific railyard and the industrial area in which the site is contained.

Stormwater runoff originating in the vicinity of the P&G facility is collected into a system of underground pipes and is directed under the flood-control levee to the Kansas River at a point very near Well #11. Monitoring or pretreatment of this runoff is not required at this time (Carlson, 1990). Stormwater runoff in the remainder of the site is directed to municipal stormwater sewers and then to the Kansas River.

Within a four-mile radius of the site, the BPU Kaw Power Plant is the only industrial user of surface water from the Kansas River. There is no known use of surface water for drinking water or irrigation purposes within 15 miles downstream of the site (KSBA/DWR, 1991).

The Kansas River in the vicinity of the site is considered to be a noncontact recreational surface water body (K.A.R. 28-16-28, 1987). The PA report noted that the Kansas River was designated a critical habitat for the federally endangered Flathead Chub, *Hybopsis gracilis*. As of January 1991, the Kansas River is also designated a critical habitat for the endangered Bald Eagle, *Haliaeetus leucocephalus* (KDWP, 1991).

5.1.3 Air

The air pathway for contamination was not specifically evaluated in this investigation. All the groundwater that is being used in the area is by industry and primarily for cooling purposes. However, if the contaminated groundwater is used in an open system or used in other processing of products, workers could be in contact with the volatile contaminants.

5.1.4 Direct Contact

The direct contact pathway for contamination was not specifically evaluated in this investigation. As with the air pathway, if the contaminated groundwater is used in an open system or used in other processing of products, workers could have direct contact with the contaminants.

SECTION 6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

1. Significant concentrations of vinyl chloride, 1,1-DCE, and TCE continue to contaminate groundwater from water supply wells and monitoring wells at the P&G facility on Kansas Ave. in Kansas City, Kansas.
2. None of the other wells sampled in the area encompassing the original P&G Well #11 site indicate a contamination problem by these VOCs.
3. Soil-gas surveys conducted within the site confirm VOC contamination originating from past activities with solvents at the P&G facility and/or from other industrial activities to the north.
4. Soil-gas surveys also indicate potential VOC contaminant sources to the east and southeast of P&G Wells #11 and #12.
5. Analytical results for samples collected from standby water supply wells at the Colgate-Palmolive facility indicate groundwater contamination by 1,2-DCA, representing a separate source from those noted in item #1 above. Because groundwater samples from these wells were aerated during sample collection, VOC concentrations could potentially be much higher than reported.
6. Information obtained from a business survey, historical maps and searches of regulatory records, is not sufficient to identify a potential source or sources of the 1,1-DCE and vinyl chloride contamination detected in P&G water supply and monitoring wells.

6.2 Recommendations

Due to the high concentrations of VOCs in Procter and Gamble water supply wells #11 and #12, the KDHE/BER recommends that continued use of the wells be limited to non-contact purposes, such as once through closed circuit cooling. Modifications of NPDES (National Pollutant Discharge Elimination System) Permit limitations and monitoring of VOC concentrations in P&G effluent to the municipal sanitary sewer may be required.

In addition, the KDHE/BER also recommends that a follow-up investigation be conducted by the Pre-Remedial Section to identify sources of the chlorinated hydrocarbon (solvents) contamination at the site. The investigation should include the following elements:

1. Additional soil-gas surveys should be conducted in other areas of the site to better delineate potential source areas, the extent of the contamination, and to assist in the selection of soil and groundwater sampling locations.
2. The four affected P&G wells should be resampled.
3. Monitoring wells and temporary test holes should be installed near potential sources and groundwater samples should be collected.
4. Elevations of wells, test holes and groundwater levels should be measured to determine bedrock levels and the direction of groundwater flow.
5. Property ownership records and other appropriate records should be researched to determine past and present owners of businesses and facilities within the site area.
6. Interviews should be conducted with business and facility operators or other knowledgeable persons to determine the types of industrial processes used at past and present facilities, the types and quantities of chemicals used in the processes, and past waste handling procedures.

These activities should be initiated as an extended site investigation (ESI) of moderate priority.

A preliminary assessment of the Colgate-Palmolive standby water supply wells should be conducted by the KDHE/BER, Pre-Remedial Section to determine the extent and source(s) of the VOCs detected in the two wells sampled during the SSI (#6A and #9A). Although only 1,2-DCA was detected at a concentration exceeding the KAL in Well #9A, the aerated nature of the samples from these wells during collection allows for the possibility that VOC concentrations could be much higher than reported.

SECTION 7. REFERENCES

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Dobson, Dennis, Chemist, Organic Chemistry Section, Kansas Health and Environmental Laboratory, September 27, 1991. Personal communication with Jill Layman, KDHE/BER.

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Fishel, V.C., 1948, Groundwater Resources of the Kansas City, Kansas, Area, Kansas Geological Survey, Bulletin 71.

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Leighty, Lester, Regulatory Compliance Coordinator, Colgate-Palmolive, May 16, 1991. Personal communication with Pamela Chaffee (KDHE/BER) during screening site investigation.

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Nightingale, Scott, Environmental Technician, KDHE/BER, May 1991. Memorandum to Pam Chaffee (KDHE/BER), subject: field activities at Procter and Gamble.

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Sax, N. I. and R. J. Lewis, 1987, Hawley's Condensed Chemical Dictionary, 11th edition.

United States Geological Survey, Shawnee, KS, Kansas City, MO, North Kansas City, MO-KS, and Parkville, MO-KS Quadrangles, 7.5 Minute Series (Topographic).

ATTACHMENT 1

**EPA Form 2070-13
Site Inspection Report**



Potential Hazardous Waste Site

Site Inspection Report

PROCTER AND GAMBLE WELL #11
KANSAS CITY, KANSAS

KSD007130032



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
KS 0007130032

II. SITE NAME AND LOCATION

| | | | | | | |
|--|--|--|----------------------|------------------------|-----------------------|-------------------|
| 01 SITE NAME (Legal, common, or descriptive name of site) Procter and Gamble Well #11 | | 02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER 1900 Kansas Avenue | | | | |
| 03 CITY Kansas City | | 04 STATE KS | 05 ZIP CODE 66110 | 06 COUNTY Wyandotte | 07 COUNTY CODE 105 | 08 CONG DIST 3 |
| 09 COORDINATES 0 LATITUDE 39 05' 25" N 0 LONGITUDE 94 39' 50" W | | 10 TYPE OF OWNERSHIP (Check one) <input checked="" type="checkbox"/> A. PRIVATE <input type="checkbox"/> B. FEDERAL <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER <input type="checkbox"/> G. UNKNOWN | | | | |

III. INSPECTION INFORMATION

| | | | |
|---|---|---|--|
| 01 DATE OF INSPECTION 05 / 16 / 91 MONTH DAY YEAR | 02 SITE STATUS <input checked="" type="checkbox"/> ACTIVE <input type="checkbox"/> INACTIVE | 03 YEARS OF OPERATION Approx. 1907 BEGINNING YEAR ENDING YEAR | |
| 04 AGENCY PERFORMING INSPECTION (Check all that apply) <input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <input type="checkbox"/> C. MUNICIPAL <input type="checkbox"/> D. MUNICIPAL CONTRACTOR <input checked="" type="checkbox"/> E. STATE <input type="checkbox"/> F. STATE CONTRACTOR KDHE/BER (Name of firm) <input type="checkbox"/> G. OTHER (Specify) | | | |

| | | | |
|---------------------------------------|-------------------------------------|-----------------------------|------------------------------------|
| 05 CHIEF INSPECTOR Pamela Chaffee | 06 TITLE Environmental Geologist | 07 ORGANIZATION KDHE/BER | 08 TELEPHONE NO. (913) 296-0969 |
| 09 OTHER INSPECTORS James Alldritt | 10 TITLE Geologist | 11 ORGANIZATION KDHE/BER | 12 TELEPHONE NO. (913) 296-1681 |
| Jim Cook | Environmental Technician | KDHE/BER | (913) 296-1674 |
| Danny Cooper | Environmental Technician | KDHE/BER | (913) 296-1674 |
| Scott Nightingale | Environmental Technician | KDHE/BER | (913) 296-1671 |
| | | | () |

| | | | |
|---|---|--|------------------------------------|
| 13 SITE REPRESENTATIVES INTERVIEWED Tomas A. (Tom) Godfrey | 14 TITLE Plant Environmental Manager | 15 ADDRESS Procter and Gamble 1900 Kansas Ave., K.C., KS | 16 TELEPHONE NO. (913) 573-0430 |
| Lester L. Leighty | Reg. Compliance Coordinator | Colgate-Palmolive 1806 Kansas Ave., K.C., KS | (913) 573-6434 |
| Leo A. Riggs | Plant General Manager | Inland Container 2101 Kansas Ave., K.C., KS | (913) 321-1414 |
| Mike Carpenter | Environmental Engineer | K.C. Southern Railway 114 West 11th, K.C., MO | (816) 556-0343 |
| | | | () |
| | | | () |
| | | | |

| | | |
|---|-----------------------|-----------------------|
| 17 ACCESS GAINED BY (Check one) <input checked="" type="checkbox"/> PERMISSION <input type="checkbox"/> WARRANT | 18 TIME OF INSPECTION | 19 WEATHER CONDITIONS |
|---|-----------------------|-----------------------|

IV. INFORMATION AVAILABLE FROM

| | | | | |
|--|---|------------------------|------------------------------------|---|
| 01 CONTACT Pamela Chaffee | 02 OF (Agency/Organization) KDHE/BER | | 03 TELEPHONE NO. (913) 296-0969 | |
| 04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM Pamela Chaffee | 05 AGENCY KDHE | 06 ORGANIZATION BER | 07 TELEPHONE NO. (913) 296-0969 | 08 DATE 09 / 25 / 91 MONTH DAY YEAR |



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
KS D007130032

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
☐ B. POWDER, FINES
☐ C. SLUDGE
☐ D. OTHER _____
(Specify)
- ☐ E. SLURRY
☒ F. LIQUID
☐ G. GAS

02 WASTE QUANTITY AT SITE

(Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS Unknown
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- ☒ A. TOXIC
☐ B. CORROSIVE
☐ C. RADIOACTIVE
☐ D. PERSISTENT
- ☒ E. SOLUBLE
☐ F. INFECTIOUS
☒ G. FLAMMABLE
☒ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
☐ J. EXPLOSIVE
☐ K. REACTIVE
☐ L. INCOMPATIBLE
☐ M. NOT APPLICABLE

III. WASTE TYPE

| CATEGORY | SUBSTANCE NAME | 01 GROSS AMOUNT | 02 UNIT OF MEASURE | 03 COMMENTS |
|----------|-------------------------|-----------------|--------------------|--------------------------|
| SLU | SLUDGE | | | |
| OLW | OILY WASTE | | | |
| SOL | SOLVENTS | Unknown | | Contaminated Groundwater |
| PSD | PESTICIDES | Unknown | | Contaminated Groundwater |
| OCC | OTHER ORGANIC CHEMICALS | | | |
| IOC | INORGANIC CHEMICALS | | | |
| ACD | ACIDS | | | |
| BAS | BASES | | | |
| MES | HEAVY METALS | | | |

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

| 01 CATEGORY | 02 SUBSTANCE NAME | 03 CAS NUMBER | 04 STORAGE/DISPOSAL METHOD | 05 CONCENTRATION | 06 MEASURE OF CONCENTRATION |
|-------------|----------------------|---------------|----------------------------|------------------|-----------------------------|
| SOL | 1,1-Dichloroethylene | 75-35-4 | In Groundwater | 578 | mg/L |
| SOL | 1,2-Dichloroethylene | 540-59-0 | In Groundwater | 34.1 | mg/L |
| SOL | Trichloroethylene | 79-01-6 | In Groundwater | 9.1 | mg/L |
| SOL | Tetrachloroethylene | 127-18-4 | In Groundwater | 3.0 | mg/L |
| SOL | Vinyl Chloride | 75-01-4 | In Groundwater | 30.9 | mg/L |
| SOL | 1,2-Dichloroethane | 107-06-2 | In Groundwater | 10.1 | mg/L |
| IOC | Sodium | | In Groundwater | 175.738 | mg/L |
| IOC | Manganese | | In Groundwater | 1.090 | mg/L |
| IOC | Thallium | | In Groundwater | 0.02 | mg/L |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

V. FEEDSTOCKS (See Appendix for CAS Numbers)

| CATEGORY | 01 FEEDSTOCK NAME | 02 CAS NUMBER | CATEGORY | 01 FEEDSTOCK NAME | 02 CAS NUMBER |
|----------|-------------------|---------------|----------|-------------------|---------------|
| FDS | | | FDS | | |
| FDS | | | FDS | | |
| FDS | | | FDS | | |
| FDS | | | FDS | | |

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Kansas Health and Environmental Laboratory, Analytical Data, 1991.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

L IDENTIFICATION

01 STATE 02 SITE NUMBER
KS 0007130032

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION 02 ☒ OBSERVED (DATE: 8/12/88) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
VOC contamination was detected in samples collected during the investigation from two industrial wells and two monitoring wells located south of Procter and Gamble property and on the northern part of Procter and Gamble property, respectively. Contamination was also detected in groundwater from two unused industrial wells at the Colgate-Palmolive facility.

01 ☐ B. SURFACE WATER CONTAMINATION 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

Not detected on site visit.

01 ☐ C. CONTAMINATION OF AIR 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

Not detected on site visit. Contaminated water has a minimal exposure to ambient air prior to discharge into sanitary sewer.

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

Not detected on site visit.

01 ☒ E. DIRECT CONTACT 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown 04 NARRATIVE DESCRIPTION

Direct contact with contaminated groundwater is possible, but unlikely.

01 ☒ F. CONTAMINATION OF SOIL 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: Unknown 04 NARRATIVE DESCRIPTION
(Acres)

Soil gas survey detected traces of PCE and TCE, however, a subsurface sample collected during the investigation did not indicate the presence of VOCs.

01 ☐ G. DRINKING WATER CONTAMINATION 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: < 20 04 NARRATIVE DESCRIPTION

Limited domestic use of groundwater within a four-mile radius. Estimated population within radius using groundwater (based on water well records) is less than 20. Surface water is not used for drinking water within four mile radius or 15 miles downstream.

01 ☒ H. WORKER EXPOSURE/INJURY 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: Unknown 04 NARRATIVE DESCRIPTION

None known. Well water used for a closed, once-through cooling system at the Procter and Gamble facility.

01 ☒ I. POPULATION EXPOSURE/INJURY 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown 04 NARRATIVE DESCRIPTION

Anyone using groundwater within or near the site can potentially be exposed to the contaminants. The only groundwater use documented is from 19 industrial wells.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
KS D007130032

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

None known.

01 ☐ K. DAMAGE TO FAUNA
04 NARRATIVE DESCRIPTION (include name(s) of species)

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

None known.

01 ☐ L. CONTAMINATION OF FOOD CHAIN
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

None known.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES
(Spills, Runoff/Standing liquids, Leaking drums)

02 ☐ OBSERVED (DATE: 1/9/77)

☐ POTENTIAL

☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

Leak of epichlorohydrin from underground line to storage tank. Immediate remediation of contaminated soil and four groundwater monitoring wells were installed. Epichlorohydrin was not detected in well samples.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

None known.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

Groundwater used for once-through cooling purposes is briefly exposed to air before entering city's sanitary sewer system. VOCs are not routinely monitored. Wastewater Pretreatment Permit requires monitoring of contaminants listed in 05 below.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

None known.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

Wastewater containing surfactants, foaming agents and possible high chlorides has had adverse effects on the city's wastewater treatment plant in the past. Pre-treatment monitoring includes surfactants, pH, total metals, oil and grease, TSS, BOD, COD, cyanide, and total toxic organics (including VOCs).

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

Once through cooling water from industrial wells is discharged to Kansas City, Kansas Wastewater Treatment Plant (Kaw Point Plant), and subsequently to Missouri River.

V. SOURCES OF INFORMATION (Cite specific references, e. g., state files, sample analysis, reports)

KDHE Bureau of Environmental Remediation Spill Report Files.
KDHE Bureau of Water - Water Well Records and Industrial Program Section Files.
KDHE BAWM, RCRA, Section 311 Files.
KSBA/DWR, Water Rights Data Base: Amounts/Statistics Data, 1991.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE KS 02 SITE NUMBER 0007130032

II. PERMIT INFORMATION

| | | | | |
|--|------------------|----------------|--------------------|-------------|
| 01 TYPE OF PERMIT ISSUED (Check all that apply) | 02 PERMIT NUMBER | 03 DATE ISSUED | 04 EXPIRATION DATE | 05 COMMENTS |
| <input type="checkbox"/> A. NPDES | | | | |
| <input type="checkbox"/> B. UIC | | | | |
| <input type="checkbox"/> C. AIR | | | | |
| <input type="checkbox"/> D. RCRA | | | | |
| <input type="checkbox"/> E. RCRA INTERIM STATUS | | | | |
| <input type="checkbox"/> F. SPCC PLAN | | | | |
| <input type="checkbox"/> G. STATE (Specify) | | | | |
| <input type="checkbox"/> H. LOCAL (Specify) | | | | |
| <input type="checkbox"/> I. OTHER (Specify) | | | | |
| <input type="checkbox"/> J. NONE | | | | |

III. SITE DESCRIPTION

| | | | | |
|--|-----------|--------------------|--|--|
| 01 STORAGE/DISPOSAL (Check all that apply) | 02 AMOUNT | 03 UNIT OF MEASURE | 04 TREATMENT (Check all that apply) | 05 OTHER |
| <input type="checkbox"/> A. SURFACE IMPOUNDMENT | | | <input type="checkbox"/> A. INCINERATION | <input checked="" type="checkbox"/> A. BUILDINGS ON SITE |
| <input type="checkbox"/> B. PILES | | | <input type="checkbox"/> B. UNDERGROUND INJECTION | |
| <input type="checkbox"/> C. DRUMS, ABOVE GROUND | | | <input type="checkbox"/> C. CHEMICAL/PHYSICAL | |
| <input type="checkbox"/> D. TANK, ABOVE GROUND | | | <input type="checkbox"/> D. BIOLOGICAL | > 50 |
| <input type="checkbox"/> E. TANK, BELOW GROUND | | | <input type="checkbox"/> E. WASTE OIL PROCESSING | 06 AREA OF SITE |
| <input type="checkbox"/> F. LANDFILL | | | <input type="checkbox"/> F. SOLVENT RECOVERY | |
| <input type="checkbox"/> G. LANDFARM | | | <input type="checkbox"/> G. OTHER RECYCLING/RECOVERY | |
| <input type="checkbox"/> H. OPEN DUMP | | | <input type="checkbox"/> H. OTHER (Specify) | (Acres) |
| <input checked="" type="checkbox"/> I. OTHER Groundwater (Specify) | Unknown | | | |

07 COMMENTS

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☒ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Source of contamination is not yet known.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ☒ NO

02 COMMENTS

Contaminated groundwater is only potentially accessible to employees working at industries using groundwater for industrial purposes.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

KDHE/BER, Procter and Gamble Well #11 site file.
KSBA/DWR, Water Rights Data Base: Amount/Statistics Data, 1991.
USGS, 7½ min Topographic Quad, Shawnee, KS 1975.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
KS 0007130032

II. DRINKING WATER SUPPLY

| | | | | | | |
|---|--|--|-----------------------------|-----------------------------|--|-------------------------|
| 01 TYPE OF DRINKING SUPPLY (Check as applicable) | | | 02 STATUS | | | 03 DISTANCE TO SITE |
| | SURFACE | WELL | ENDANGERED | AFFECTED | MONITORED | > 4 upgradient |
| COMMUNITY | A. <input checked="" type="checkbox"/> | B. <input checked="" type="checkbox"/> | A. <input type="checkbox"/> | B. <input type="checkbox"/> | C. <input checked="" type="checkbox"/> | A. > 15 downstream (mi) |
| NON-COMMUNITY | C. <input type="checkbox"/> | D. <input checked="" type="checkbox"/> | D. <input type="checkbox"/> | E. <input type="checkbox"/> | F. <input type="checkbox"/> | B. 3.9 (mi) |

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING
(Other sources available)
COMMERCIAL, INDUSTRIAL, IRRIGATION
(No other water sources available)

☒ C. COMMERCIAL, INDUSTRIAL, IRRIGATION
(Limited other sources available)

☐ D. NOT USED, UNUSEABLE

| | | | | |
|---|---|---|--|--|
| 02 POPULATION SERVED BY GROUND WATER ± 20 | | 03 DISTANCE TO NEAREST DRINKING WATER WELL $3\frac{1}{2}$ -4 (mi) | | |
| 04 DEPTH TO GROUNDWATER 36 (ft) | 05 DIRECTION OF GROUNDWATER FLOW South-Southwest | 06 DEPTH TO AQUIFER OF CONCERN 36 (ft) | 07 POTENTIAL YIELD OF AQUIFER (gpd) | 08 SOLE SOURCE AQUIFER <input type="checkbox"/> YES <input type="checkbox"/> NO |

09 DESCRIPTION OF WELLS (Including usage, depth, and location relative to population and buildings)

Wells in the area are used for industrial purposes. The depth of these wells range from 52 - 98 feet.

| | | | |
|---|---------------------------------|---|--------------------------------|
| 10 RECHARGE AREA | | 11 DISCHARGE AREA | |
| <input checked="" type="checkbox"/> YES | COMMENTS Kansas River Alluvium. | <input checked="" type="checkbox"/> YES | COMMENTS Kansas River Alluvium |
| <input type="checkbox"/> NO | | <input type="checkbox"/> NO | |

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☐ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☒ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

| NAME: | AFFECTED | DISTANCE TO SITE |
|----------------|--------------------------|------------------|
| Kansas River | <input type="checkbox"/> | < 1/8 (mi) |
| Missouri River | <input type="checkbox"/> | 3 (mi) |
| | <input type="checkbox"/> | (mi) |

V. DEMOGRAPHIC AND PROPERTY INFORMATION

| | | | |
|--|--|--|-----------------------------------|
| 01 TOTAL POPULATION WITHIN | | | 02 DISTANCE TO NEAREST POPULATION |
| ONE (1) MILE OF SITE A. 7,410 NO. OF PERSONS | TWO (2) MILES OF SITE B. 29,650 NO. OF PERSONS | THREE (3) MILES OF SITE C. 66,720 NO. OF PERSONS | on-site (mi) |

| | |
|--|--|
| 03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE > 1,000 | 04 DISTANCE TO NEAREST OFF-SITE BUILDING < 1/8 (mi) |
|--|--|

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

East of the site is a residential area of Kansas City, Kansas. South and west (across the Kansas River are industrial areas. North of the site residential areas are located on upland bluffs of the Kansas River valley, separated in elevation from the site by approximately 80 feet.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
KS 0007130032

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☐ B. $10^{-4} - 10^{-6}$ cm/sec ☒ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-8} cm/sec) ☒ B. RELATIVELY IMPERMEABLE ($10^{-6} - 10^{-8}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK

60-90 (ft)

04 DEPTH OF CONTAMINATED SOIL ZONE

N/A (ft)

05 SOIL pH

N/A

06 NET PRECIPITATION

-7 (in)

07 ONE YEAR 24 HOUR RAINFALL

2.8 (in)

08 SLOPE
SITE SLOPE

0-1 %

DIRECTION OF SITE SLOPE

Southwest

TERRAIN AVERAGE SLOPE

0.5 %

09 FLOOD POTENTIAL

SITE IS IN _____ YEAR FLOODPLAIN

10

☒ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (3 acre minimum)

ESTUARINE

OTHER

A. N/A (mi)

B. N/A (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

< 1/8 (mi)

ENDANGERED SPECIES: Flathead hub & Bald Eagle

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL

RESIDENTIAL AREAS; NATIONAL STATE PARKS,
FORESTS, OR WILDLIFE RESERVES

AGRICULTURAL LANDS
PRIME AG LAND AG LAND

A. On-site (mi)

B. 0.1 (mi)

C. _____ (mi) D. _____ (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

A flood control levee separates the south and west portions of the site from the Kansas River. North of the site approximately 2,000 feet is a high bluff of Pennsylvanian shale and limestone rising above the river valley nearly 100 feet. No other unusual items about the site topography in relation to the surrounding area.

VII. SOURCES OF INFORMATION (See specific references, e.g., State files, sample analysis reports)

USGS 7.5' Topographic Quad, Shawnee, Kansas, 1975.
KDHE/BER, Procter and Gamble Well #11 site file.
Kansas Geological Survey Bulletin 71, 1948, by V. C. Fishell.
U. S. Dept. of Commerce, Bureau of the Census, 1991.
KDHE/BER, Procter and Gamble Well #11 Site PA and SSI field notes, 1990 and 1991.
Kansas Dept. of Wildlife and Parks, 1991.
City of Kansas City, Kansas, Planning Division, 1991.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
KS D007130032

II. SAMPLES TAKEN

| SAMPLE TYPE | 01 NUMBER OF SAMPLES TAKEN | 02 SAMPLES SENT TO | 03 ESTIMATED DATE RESULTS AVAILABLE |
|----------------|----------------------------|--|-------------------------------------|
| GROUNDWATER | 8 | Kansas Health and Environmental Laboratory | Present |
| SURFACE WATER | | Forbes Field, Topeka, KS | |
| WASTE | | | |
| AIR | | | |
| RUNOFF | | | |
| SPILL | | | |
| SOIL | 1 | Kansas Health and Environmental Laboratory Forbes Field, Topeka, KS | Present |
| VEGETATION | | | |
| OTHER SOIL GAS | 39 | On-site analysis of soil gas and headspace of groundwater samples. | Present |

III. FIELD MEASUREMENTS TAKEN

| 01 TYPE | 02 COMMENTS |
|---------------|--|
| Organic Vapor | Traces of PCE, DCE, TCE, and chloroform. |
| Distance | Footage measurements to wells sampled. |
| | |
| | |
| | |

IV. PHOTOGRAPHS AND MAPS

| | |
|---|---|
| 01 TYPE <input checked="" type="checkbox"/> GROUND <input checked="" type="checkbox"/> AERIAL | 02 IN CUSTODY OF <u>Pamela K. Chaffee KDHE/BER</u> <small>(Name of organization or individual)</small> |
| 03 MAPS <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO | 04 LOCATION OF MAPS <u>KDHE/BER, Forbes Field, Topeka, KS.</u> |

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

KDHE/BER, Procter and Gamble Well #11 site files. and SSI field notes. .



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

L IDENTIFICATION

01 STATE 02 SITE NUMBER
KS 0007130032

| II. CURRENT OWNER(S) | | | | PARENT COMPANY (if applicable) | | | |
|---|----------|---------------|--|---|----------|---------------|--|
| 01 NAME | | 02 D+B NUMBER | | 08 NAME | | 09 D+B NUMBER | |
| Procter and Gamble Mfg. Company | | 12-130-4067 | | | | | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 04 SIC CODE | | 10 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 11 SIC CODE | |
| 19th and Kansas Avenue | | 2841/2899 | | | | | |
| 05 CITY | 06 STATE | 07 ZIP CODE | | 12 CITY | 13 STATE | 14 ZIP CODE | |
| Kansas City | KS | 66110 | | | | | |
| 01 NAME | | 02 D+B NUMBER | | 08 NAME | | 09 D+B NUMBER | |
| Inland Container Corp. | | 11-879-9212 | | | | | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 04 SIC CODE | | 10 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 11 SIC CODE | |
| 2101 Kansas Avenue | | 2653 | | | | | |
| 05 CITY | 06 STATE | 07 ZIP CODE | | 12 CITY | 13 STATE | 14 ZIP CODE | |
| Kansas City | KS | 66110 | | | | | |
| 01 NAME | | 02 D+B NUMBER | | 08 NAME | | 09 D+B NUMBER | |
| Colgate-Palmolive Mfg. Company | | 06-603-2707 | | | | | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 04 SIC CODE | | 10 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 11 SIC CODE | |
| 1806 Kansas Avenue | | 2844 | | | | | |
| 05 CITY | 06 STATE | 07 ZIP CODE | | 12 CITY | 13 STATE | 14 ZIP CODE | |
| Kansas City | KS | 66105 | | | | | |
| 01 NAME | | 02 D+B NUMBER | | 08 NAME | | 09 D+B NUMBER | |
| K. C. Southern Railway Company | | 00-712-9729 | | | | | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 04 SIC CODE | | 10 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 11 SIC CODE | |
| 114 W. 11th | | | | | | | |
| 05 CITY | 06 STATE | 07 ZIP CODE | | 12 CITY | 13 STATE | 14 ZIP CODE | |
| Kansas City | MO | 64105 | | | | | |
| III. PREVIOUS OWNER(S) (List most recent first) | | | | IV. REALTY OWNER(S) (if applicable: list most recent first) | | | |
| 01 NAME | | 02 D+B NUMBER | | 01 NAME | | 02 D+B NUMBER | |
| | | | | | | | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 04 SIC CODE | | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 04 SIC CODE | |
| | | | | | | | |
| 05 CITY | 06 STATE | 07 ZIP CODE | | 05 CITY | 06 STATE | 07 ZIP CODE | |
| | | | | | | | |
| 01 NAME | | 02 D+B NUMBER | | 01 NAME | | 02 D+B NUMBER | |
| | | | | | | | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 04 SIC CODE | | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 04 SIC CODE | |
| | | | | | | | |
| 05 CITY | 06 STATE | 07 ZIP CODE | | 05 CITY | 06 STATE | 07 ZIP CODE | |
| | | | | | | | |
| 01 NAME | | 02 D+B NUMBER | | 01 NAME | | 02 D+B NUMBER | |
| | | | | | | | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 04 SIC CODE | | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 04 SIC CODE | |
| | | | | | | | |
| 05 CITY | 06 STATE | 07 ZIP CODE | | 05 CITY | 06 STATE | 07 ZIP CODE | |
| | | | | | | | |
| V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports) | | | | | | | |
| KDHE files. | | | | | | | |
| Reference Librarian. | | | | | | | |



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
KS 0007130032

II. CURRENT OPERATOR (Provide if different from owner)

OPERATOR'S PARENT COMPANY (If applicable)

| | | | | | | | |
|---|--|------------------|-------------|---|--|---------------|-------------|
| 01 NAME | | 02 D+B NUMBER | | 10 NAME | | 11 D+B NUMBER | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 04 SIC CODE | | 12 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 13 SIC CODE | |
| 05 CITY | | 06 STATE | 07 ZIP CODE | 14 CITY | | 15 STATE | 16 ZIP CODE |
| 08 YEARS OF OPERATION | | 09 NAME OF OWNER | | | | | |

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

| | | | | | | | |
|---|--|-------------------------------------|-------------|---|--|---------------|-------------|
| 01 NAME | | 02 D+B NUMBER | | 10 NAME | | 11 D+B NUMBER | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 04 SIC CODE | | 12 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 13 SIC CODE | |
| 05 CITY | | 06 STATE | 07 ZIP CODE | 14 CITY | | 15 STATE | 16 ZIP CODE |
| 08 YEARS OF OPERATION | | 09 NAME OF OWNER DURING THIS PERIOD | | | | | |

| | | | | | | | |
|---|--|-------------------------------------|-------------|---|--|---------------|-------------|
| 01 NAME | | 02 D+B NUMBER | | 10 NAME | | 11 D+B NUMBER | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 04 SIC CODE | | 12 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 13 SIC CODE | |
| 05 CITY | | 06 STATE | 07 ZIP CODE | 14 CITY | | 15 STATE | 16 ZIP CODE |
| 08 YEARS OF OPERATION | | 09 NAME OF OWNER DURING THIS PERIOD | | | | | |

| | | | | | | | |
|---|--|-------------------------------------|-------------|---|--|---------------|-------------|
| 01 NAME | | 02 D+B NUMBER | | 10 NAME | | 11 D+B NUMBER | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 04 SIC CODE | | 12 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 13 SIC CODE | |
| 05 CITY | | 06 STATE | 07 ZIP CODE | 14 CITY | | 15 STATE | 16 ZIP CODE |
| 08 YEARS OF OPERATION | | 09 NAME OF OWNER DURING THIS PERIOD | | | | | |

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
KS D007130032

II. ON-SITE GENERATOR

| | | |
|---|----------------|----------------------|
| 01 NAME Procter and Gamble | 02 D+B NUMBER | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) 1900 Kansas Avenue | 04 SIC CODE | |
| 05 CITY Kansas City | 06 STATE KS | 07 ZIP CODE 66105 |

ON-SITE GENERATOR(S) CONTINUED

| | | | | | |
|---|----------------|---|-------------------------|----------------|----------------------|
| 01 NAME Colgate-Palmolive | 02 D+B NUMBER | 01 NAME The P Q Corporation | 02 D+B NUMBER | | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) 1806 Kansas Avenue | 04 SIC CODE | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) 1700 Kansas Avenue | 04 SIC CODE | | |
| 05 CITY Kansas City | 06 STATE KS | 07 ZIP CODE 66105 | 05 CITY Kansas City | 06 STATE KS | 07 ZIP CODE 66105 |
| 01 NAME MMPP Corporation | 02 D+B NUMBER | 01 NAME Board of Public Utilities | 02 D+B NUMBER | | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) 1630 Kansas Avenue | 04 SIC CODE | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) 2015 Kansas Avenue | 04 SIC CODE | | |
| 05 CITY Kansas City | 06 STATE KS | 07 ZIP CODE 66105 | 05 CITY Kansas City, | 06 STATE KS | 07 ZIP CODE 66105 |

IV. TRANSPORTER(S)

| | | | | | |
|---|---------------|---|---------------|----------|-------------|
| 01 NAME | 02 D+B NUMBER | 01 NAME | 02 D+B NUMBER | | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE | | |
| 05 CITY | 06 STATE | 07 ZIP CODE | 05 CITY | 06 STATE | 07 ZIP CODE |
| 01 NAME | 02 D+B NUMBER | 01 NAME | 02 D+B NUMBER | | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE | | |
| 05 CITY | 06 STATE | 07 ZIP CODE | 05 CITY | 06 STATE | 07 ZIP CODE |

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

KDHE/BAWM, RCRA Files.
KDHE/BER, Procter & Gamble Well #11 Site Files.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

L IDENTIFICATION

01 STATE 02 SITE NUMBER
KS D007130032

II. PAST RESPONSE ACTIVITIES

| | | |
|---|-----------------------------|-----------------------|
| 01 <input type="checkbox"/> A. WATER SUPPLY CLOSED 04 DESCRIPTION None known. | 02 DATE _____ | 03 AGENCY _____ |
| 01 <input type="checkbox"/> B. TEMPORARY WATER SUPPLY PROVIDED 04 DESCRIPTION None known. | 02 DATE _____ | 03 AGENCY _____ |
| 01 <input type="checkbox"/> C. PERMANENT WATER SUPPLY PROVIDED 04 DESCRIPTION None known. | 02 DATE _____ | 03 AGENCY _____ |
| 01 <input type="checkbox"/> D. SPILLED MATERIAL REMOVED 04 DESCRIPTION Epichlorohydrin recovered from leaking underground line at Procter & Gamble. | 02 DATE <u>January 1977</u> | 03 AGENCY <u>KDHE</u> |
| 01 <input checked="" type="checkbox"/> E. CONTAMINATED SOIL REMOVED 04 DESCRIPTION Soil material containing epichlorohydrin removed and disposed of after leak detected at the Procter and Gamble facility. | 02 DATE <u>January 1977</u> | 03 AGENCY <u>KDHE</u> |
| 01 <input type="checkbox"/> F. WASTE REPACKAGED 04 DESCRIPTION None known. | 02 DATE _____ | 03 AGENCY _____ |
| 01 <input type="checkbox"/> G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION None known. | 02 DATE _____ | 03 AGENCY _____ |
| 01 <input type="checkbox"/> H. ON SITE BURIAL 04 DESCRIPTION None known. | 02 DATE _____ | 03 AGENCY _____ |
| 01 <input type="checkbox"/> I. IN SITU CHEMICAL TREATMENT 04 DESCRIPTION None known. | 02 DATE _____ | 03 AGENCY _____ |
| 01 <input type="checkbox"/> J. IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION None known. | 02 DATE _____ | 03 AGENCY _____ |
| 01 <input type="checkbox"/> K. IN SITU PHYSICAL TREATMENT 04 DESCRIPTION None known. | 02 DATE _____ | 03 AGENCY _____ |
| 01 <input type="checkbox"/> L. ENCAPSULATION 04 DESCRIPTION None known. | 02 DATE _____ | 03 AGENCY _____ |
| 01 <input type="checkbox"/> M. EMERGENCY WASTE TREATMENT 04 DESCRIPTION None known. | 02 DATE _____ | 03 AGENCY _____ |
| 01 <input type="checkbox"/> N. CUTOFF WALLS 04 DESCRIPTION None known. | 02 DATE _____ | 03 AGENCY _____ |
| 01 <input type="checkbox"/> O. EMERGENCY DRAINING/SURFACE WATER DIVERSION 04 DESCRIPTION None known. | 02 DATE _____ | 03 AGENCY _____ |
| 01 <input type="checkbox"/> P. CUTOFF TRENCHES/SUMP 04 DESCRIPTION None known. | 02 DATE _____ | 03 AGENCY _____ |
| 01 <input type="checkbox"/> Q. SUBSURFACE CUTOFF WALL 04 DESCRIPTION None known. | 02 DATE _____ | 03 AGENCY _____ |



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

L IDENTIFICATION

01 STATE 02 SITE NUMBER
KS 0007130032

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None known.

01 ☐ S. CAPPING/COVERING
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None known.

01 ☐ T. BULK TANKAGE REPAIRED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None known.

01 ☐ U. GROUT CURTAIN CONSTRUCTED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None known.

01 ☐ V. BOTTOM SEALED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None known.

01 ☐ W. GAS CONTROL
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None known.

01 ☐ X. FIRE CONTROL
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None known.

01 ☐ Y. LEACHATE TREATMENT
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None known.

01 ☐ Z. AREA EVACUATED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None known.

01 ☐ 1. ACCESS TO SITE RESTRICTED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None known.

01 ☐ 2. POPULATION RELOCATED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

None known.

01 ☐ 3. OTHER REMEDIAL ACTIVITIES
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

KDHE files.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

L IDENTIFICATION

| | |
|----------|----------------|
| 01 STATE | 02 SITE NUMBER |
| KS | 0007130032 |

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

KDHE files.

ATTACHMENT 2

Laboratory Analyses

KANSAS HEALTH AND ENVIRONMENTAL LABORATORY
Department of Health and Environment
Biochemical Analysis Laboratory
Bldg. 740, Forbes Field, Topeka, KS 66620-8420
(913) 296-1657

RESULTS OF LABORATORY ANALYSES

Report To: PAM CHAFFEE-BER✓
Address:

Lab Number: 102632PT
Lab Acct Code: BER
Env Acct Code: ER

Locality: MID-WEST GASES INC. 19TH & OSAGE ST. KC KS

Collected By: CHAFFEE

Time: 1625

Depth: ****

Site ID: 00002594 Matrix: Water

Date Collected: 5-16-91

Date Received: 5-20-91

Comments: FILTERED SAMPLE

Date Reported: 6- 5-91

* * * * *

Results Expressed In Milligrams/Liter

| | | | | | | |
|----------------|--------|----------------------|--------|------------|----|-------|
| Total Hard. | | pH (Units) | 7.9 | Aluminum | | 0.21 |
| (CaCO3) | 241 | Turbidity (NTU) | NA | Antimony | LT | 0.01 |
| Calcium | 64.079 | Spec. Conductance | | Arsenic | LT | 0.021 |
| Magnesium | 19.656 | (micromhos/cm) | NA | Barium | | 0.079 |
| Sodium | 45.224 | T. Dissolved Solids | NA | Beryllium | LT | 0.001 |
| Potassium | 6.15 | Total Phosphorus (P) | NA | Cadmium | LT | 0.002 |
| | | Silica (SiO2) | 10.697 | Chromium | LT | 0.003 |
| Total Alk. | | Boron | 0.075 | Cobalt | LT | 0.004 |
| (CaCO3) | 172 | Dissolved Oxygen | NA | Copper | | 0.019 |
| Chloride | 23.2 | BOD | NA | Iron | | 0.022 |
| Sulfate | 136 | COD | NA | Lead | LT | 0.001 |
| Nitrate (N) | 3.38 | CBOD | NA | Manganese | | 0.025 |
| Nitrite | NA | Ammonia (N) | NA | Mercury | | NA |
| Fluoride | 0.80 | T. Sus. Solids | NA | Molybdenum | | 0.003 |
| | | Corrosivity (LI) | NA | Nickel | LT | 0.007 |
| Cyanide | NA | Kjeldahl Nitrogen | NA | Selenium | | 0.007 |
| Oil/Grease | NA | Chromium (+6) | NA | Silver | LT | 0.004 |
| Phenols | NA | Tin | NA | Thallium | | 0.02 |
| TDP | NA | MBAS | NA | Vanadium | | 0.004 |
| Sulfide | NA | Flash Pt (Celsius) | NA | Zinc | | 0.437 |
| Total Coliform | NA | | | | | |
| Fecal Coliform | NA | | | | | |
| Fecal Strep | NA | | | | | |

Chemist: FD

NA - Not Analyzed

LT - Less Than

* * * * *

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KANSAS HEALTH AND ENVIRONMENTAL LABORATORY
 Department of Health and Environment
 Biochemical Analysis Laboratory
 Bldg. 740, Forbes Field, Topeka, KS 66620-8420
 (913) 296-1657

RESULTS OF LABORATORY ANALYSES

Report To: PAM CHAFFEE-BER
 Address:

Lab Number: 102634PT
 Lab Acct Code: BER
 Env Acct Code: ER

Locality: COLGATE-PALMOLIVE WELL #6A

Collected By: CHAFFEE

Time: 1525

Depth: 73

Site ID: 00002648

Matrix: Water

Date Collected: 5-16-91

Date Received: 5-20-91

Comments: FILTERED SAMPLE

Date Reported: 6- 4-91

* * * * *

Results Expressed In Milligrams/Liter

| | | | | | | |
|----------------|---------|----------------------|--------|------------|----|-------|
| Total Hard. | | pH (Units) | 7.3 | Aluminum | LT | 0.026 |
| (CaCO3) | 646 | Turbidity (NTU) | NA | Antimony | | 0.02 |
| Calcium | 226.979 | Spec. Conductance | | Arsenic | | 0.023 |
| Magnesium | 19.323 | (micromhos/cm) | NA | Barium | | 0.073 |
| Sodium | 113.898 | T. Dissolved Solids | NA | Beryllium | LT | 0.001 |
| Potassium | 10.27 | Total Phosphorus (P) | NA | Cadmium | | 0.005 |
| | | Silica (SiO2) | 37.042 | Chromium | | 0.009 |
| Total Alk. | | Boron | 1.076 | Cobalt | LT | 0.004 |
| (CaCO3) | 475 | Dissolved Oxygen | NA | Copper | | 0.037 |
| Chloride | 157.0 | BOD | NA | Iron | | 0.021 |
| Sulfate | 239 | COD | NA | Lead | LT | 0.001 |
| Nitrate (N) | 0.03 | CBOD | NA | Manganese | | 1.090 |
| Nitrite | NA | Ammonia (N) | NA | Mercury | | NA |
| Fluoride | 0.20 | T. Sus. Solids | NA | Molybdenum | | 0.003 |
| | | Corrosivity (LI) | NA | Nickel | LT | 0.007 |
| Cyanide | NA | Kjeldahl Nitrogen | NA | Selenium | LT | 0.001 |
| Oil/Grease | NA | Chromium (+6) | NA | Silver | LT | 0.004 |
| Phenols | NA | Tin | NA | Thallium | LT | 0.015 |
| TDP | NA | MBAS | NA | Vanadium | LT | 0.003 |
| Sulfide | NA | Flash Pt (Celsius) | NA | Zinc | | 0.124 |
| Total Coliform | NA | | | | | |
| Fecal Coliform | NA | | | | | |
| Fecal Strep | NA | | | | | |

Chemist: FD

NA - Not Analyzed

LT - Less Than

* * * * *

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KANSAS HEALTH AND ENVIRONMENTAL LABORATORY
Department of Health and Environment
Biochemical Analysis Laboratory
Bldg. 740, Forbes Field, Topeka, KS 66620-8420
(913) 296-1657

RESULTS OF LABORATORY ANALYSES

Report To: PAM CHAFFEE-BER
Address:

Lab Number: 102633PT
Lab Acct Code: BER
Env Acct Code: ER

Locality: COLGATE-PALMOLIVE WELL #9A

Collected By: CHAFFEE

Time: 1433

Depth: 72

Site ID: 00002655 Matrix: Water

Date Collected: 5-16-91

Date Received: 5-20-91

Comments: FILTERED SAMPLE

Date Reported: 6-4-91

* * * * *

Results Expressed In Milligrams/Liter

| | | | | | | |
|----------------|---------|----------------------|--------|------------|----|-------|
| Total Hard. | | pH (Units) | 7.3 | Aluminum | LT | 0.026 |
| (CaCO3) | 595 | Turbidity (NTU) | NA | Antimony | LT | 0.01 |
| Calcium | 207.206 | Spec. Conductance | | Arsenic | | 0.039 |
| Magnesium | 19.013 | (micromhos/cm) | NA | Barium | | 0.054 |
| Sodium | 175.738 | T. Dissolved Solids | NA | Beryllium | LT | 0.001 |
| Potassium | 9.09 | Total Phosphorus (P) | NA | Cadmium | LT | 0.002 |
| | | Silica (SiO2) | 29.527 | Chromium | | 0.006 |
| Total Alk. | | Boron | 0.387 | Cobalt | LT | 0.004 |
| (CaCO3) | 612 | Dissolved Oxygen | NA | Copper | | 0.005 |
| Chloride | 119.0 | BOD | NA | Iron | | 0.028 |
| Sulfate | 232 | COD | NA | Lead | LT | 0.001 |
| Nitrate (N) | 0.04 | CBOD | NA | Manganese | | 0.924 |
| Nitrite | NA | Ammonia (N) | NA | Mercury | | NA |
| Fluoride | 0.26 | T. Sus. Solids | NA | Molybdenum | | 0.003 |
| | | Corrosivity (LI) | NA | Nickel | | 0.014 |
| Cyanide | NA | Kjeldahl Nitrogen | NA | Selenium | | 0.004 |
| Oil/Grease | NA | Chromium (+6) | NA | Silver | LT | 0.004 |
| Phenols | NA | Tin | NA | Thallium | LT | 0.015 |
| TDP | NA | MBAS | NA | Vanadium | LT | 0.003 |
| Sulfide | NA | Flash Pt (Celsius) | NA | Zinc | | 0.049 |
| Total Coliform | NA | | | | | |
| Fecal Coliform | NA | | | | | |
| Fecal Strep | NA | | | | | |

Chemist: FD

NA - Not Analyzed

LT - Less Than

* * * * *

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KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
Kansas Health & Environmental Laboratory
Organic Chemistry Laboratory
Topeka, Kansas 66620

GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037490C
Report Date: 5-23-91

SAMPLE COLLECTION INFORMATION

Site ID No.: _____ Program Code: ER Sample Type: SOIL
Collection Site: NWSWNENE201125E, 04105348/INLAND CONTAINER BORING #2
Collected By: KDHE-ALLDRITT/NIGHTINGALE Date: 5-16-91 Time: 1600

RESULTS OF ANALYSIS

| PURGABLE ORGANICS | Concentration (MG/KG) | Reporting Limit (MG/KG) |
|-------------------------------------|--------------------------|----------------------------|
| CHLOROMETHANE | NOT DETECTED | 5.0 |
| BROMOMETHANE | NOT DETECTED | 1.2 |
| VINYL CHLORIDE | NOT DETECTED | 0.8 |
| CHLOROETHANE | NOT DETECTED | 3.7 |
| DICHLOROMETHANE | NOT DETECTED | 0.9 |
| 1,1-DICHLOROETHYLENE | NOT DETECTED | 0.6 |
| 1,1-DICHLOROETHANE | NOT DETECTED | 0.5 |
| TRANS &/OR CIS 1,2-DICHLOROETHYLENE | NOT DETECTED | 0.5 |
| TRICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROETHANE | NOT DETECTED | 0.6 |
| 1,1,1-TRICHLOROETHANE | NOT DETECTED | 0.7 |
| TETRACHLOROMETHANE | NOT DETECTED | 0.7 |
| BROMODICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROPROPANE | NOT DETECTED | 0.5 |
| TRANS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.8 |
| TRICHLOROETHYLENE | NOT DETECTED | 0.6 |
| BENZENE | NOT DETECTED | 0.5 |
| DIBROMOCHLOROMETHANE (THM) | NOT DETECTED | 0.7 |
| CIS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.9 |
| 1,1,2-TRICHLOROETHANE | NOT DETECTED | 0.6 |
| BROMOFORM (THM) | NOT DETECTED | 1.5 |
| 1,1,2,2-TETRACHLOROETHANE | NOT DETECTED | 0.6 |
| TETRACHLOROETHYLENE | NOT DETECTED | 1.1 |
| TOLUENE | NOT DETECTED | 0.5 |
| CHLOROBENZENE | NOT DETECTED | 0.5 |
| ETHYLBENZENE | NOT DETECTED | 0.7 |
| META-XYLENE | NOT DETECTED | 0.6 |
| ORTHO &/OR PARA-XYLENE | NOT DETECTED | 0.6 |
| 1,3-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,2-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,4-DICHLOROBENZENE | NOT DETECTED | 1.0 |

Analyst: RICHARD L. PIERCE *RP*
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KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
Kansas Health & Environmental Laboratory
Organic Chemistry Laboratory
Topeka, Kansas 66620

GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037370C
Report Date: 5-23-91

SAMPLE COLLECTION INFORMATION

Site ID No.: Program Code: ER Sample Type: WATER
Collection Site: 04105348/FIELD BLANK/P&G
Collected By: KDHE-CHAFFEE Date: 5-13-91 Time: 1700

RESULTS OF ANALYSIS

| PURGABLE ORGANICS | Concentration (UG/L) | Reporting Limit (UG/L) |
|-------------------------------------|-------------------------|---------------------------|
| CHLOROMETHANE | NOT DETECTED | 5.0 |
| BROMOMETHANE | NOT DETECTED | 1.2 |
| VINYL CHLORIDE | NOT DETECTED | 0.8 |
| CHLOROETHANE | NOT DETECTED | 3.7 |
| DICHLOROMETHANE | NOT DETECTED | 0.9 |
| 1,1-DICHLOROETHYLENE | NOT DETECTED | 0.6 |
| 1,1-DICHLOROETHANE | NOT DETECTED | 0.5 |
| TRANS &/OR CIS 1,2-DICHLOROETHYLENE | NOT DETECTED | 0.5 |
| TRICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROETHANE | NOT DETECTED | 0.6 |
| 1,1,1-TRICHLOROETHANE | NOT DETECTED | 0.7 |
| TETRACHLOROMETHANE | NOT DETECTED | 0.7 |
| BROMODICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROPROPANE | NOT DETECTED | 0.5 |
| TRANS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.8 |
| TRICHLOROETHYLENE | NOT DETECTED | 0.6 |
| BENZENE | NOT DETECTED | 0.5 |
| DIBROMOCHLOROMETHANE (THM) | NOT DETECTED | 0.7 |
| CIS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.9 |
| 1,1,2-TRICHLOROETHANE | NOT DETECTED | 0.6 |
| BROMOFORM (THM) | NOT DETECTED | 1.5 |
| 1,1,2,2-TETRACHLOROETHANE | NOT DETECTED | 0.6 |
| TETRACHLOROETHYLENE | NOT DETECTED | 1.1 |
| TOLUENE | NOT DETECTED | 0.5 |
| CHLOROBENZENE | NOT DETECTED | 0.5 |
| ETHYLBENZENE | NOT DETECTED | 0.7 |
| META-XYLENE | NOT DETECTED | 0.6 |
| ORTHO &/OR PARA-XYLENE | NOT DETECTED | 0.6 |
| 1,3-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,2-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,4-DICHLOROBENZENE | NOT DETECTED | 1.0 |

Analyst: RICHARD L. PIERCE *RP*
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KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
Kansas Health & Environmental Laboratory
Organic Chemistry Laboratory
Topeka, Kansas 66620

GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037390C
Report Date: 5-23-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00007926 Program Code: ER Sample Type: WATER
Collection Site: PROCTER & GAMBLE WELL #11
Collected By: KDHE-CHAFFEE/NIGHTINGALE Date: 5-14-91 Time: 0940

RESULTS OF ANALYSIS

| PURGABLE ORGANICS | Concentration (UG/L) | Reporting Limit (UG/L) |
|-------------------------------------|-------------------------|---------------------------|
| CHLOROMETHANE | NOT DETECTED | 5.0 |
| BROMOMETHANE | NOT DETECTED | 1.2 |
| VINYL CHLORIDE | 30.9 | 0.8 |
| CHLOROETHANE | NOT DETECTED | 3.7 |
| DICHLOROMETHANE | NOT DETECTED | 0.9 |
| 1,1-DICHLOROETHYLENE | 469 | 0.6 |
| 1,1-DICHLOROETHANE | NOT DETECTED | 0.5 |
| TRANS &/OR CIS 1,2-DICHLOROETHYLENE | 34.1 | 0.5 |
| TRICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROETHANE | NOT DETECTED | 0.6 |
| 1,1,1-TRICHLOROETHANE | NOT DETECTED | 0.7 |
| TETRACHLOROMETHANE | NOT DETECTED | 0.7 |
| BROMODICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROPROPANE | NOT DETECTED | 0.5 |
| TRANS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.8 |
| TRICHLOROETHYLENE | NOT DETECTED | 0.6 |
| BENZENE | NOT DETECTED | 0.5 |
| DIBROMOCHLOROMETHANE (THM) | NOT DETECTED | 0.7 |
| CIS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.9 |
| 1,1,2-TRICHLOROETHANE | NOT DETECTED | 0.6 |
| BROMOFORM (THM) | NOT DETECTED | 1.5 |
| 1,1,2,2-TETRACHLOROETHANE | NOT DETECTED | 0.6 |
| TETRACHLOROETHYLENE | NOT DETECTED | 1.1 |
| TOLUENE | NOT DETECTED | 0.5 |
| CHLOROBENZENE | NOT DETECTED | 0.5 |
| ETHYLBENZENE | NOT DETECTED | 0.7 |
| META-XYLENE | NOT DETECTED | 0.6 |
| ORTHO &/OR PARA-XYLENE | NOT DETECTED | 0.6 |
| 1,3-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,2-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,4-DICHLOROBENZENE | NOT DETECTED | 1.0 |

Comment: 1,4-DIOXANE WAS INDICATED.

Analyst: RICHARD L. PIERCE *ALL*
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CATHY FAGAN, BEQ, FORBES

Roger H. Carlson, Ph.D., Director

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Kansas Health & Environmental Laboratory
Organic Chemistry Laboratory
Topeka, Kansas 66620

GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037410C
Report Date: 5-23-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00002624 Program Code: ER Sample Type: WATER
Collection Site: PROCTER & GAMBLE WELL #12
Collected By: KDHE-CHAFFEE/NIGHTINGALE Date: 5-14-91 Time: 1015

RESULTS OF ANALYSIS

| PURGABLE ORGANICS | Concentration (UG/L) | Reporting Limit (UG/L) |
|-------------------------------------|-------------------------|---------------------------|
| CHLOROMETHANE | NOT DETECTED | 5.0 |
| BROMOMETHANE | NOT DETECTED | 1.2 |
| VINYL CHLORIDE | 2.3 | 0.8 |
| CHLOROETHANE | NOT DETECTED | 3.7 |
| DICHLOROMETHANE | NOT DETECTED | 0.9 |
| 1,1-DICHLOROETHYLENE | 578 | 0.6 |
| 1,1-DICHLOROETHANE | NOT DETECTED | 0.5 |
| TRANS &/OR CIS 1,2-DICHLOROETHYLENE | 1.2 | 0.5 |
| TRICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROETHANE | NOT DETECTED | 0.6 |
| 1,1,1-TRICHLOROETHANE | NOT DETECTED | 0.7 |
| TETRACHLOROMETHANE | NOT DETECTED | 0.7 |
| BROMODICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROPROPANE | NOT DETECTED | 0.5 |
| TRANS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.8 |
| TRICHLOROETHYLENE | NOT DETECTED | 0.6 |
| BENZENE | NOT DETECTED | 0.5 |
| DIBROMOCHLOROMETHANE (THM) | NOT DETECTED | 0.7 |
| CIS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.9 |
| 1,1,2-TRICHLOROETHANE | NOT DETECTED | 0.6 |
| BROMOFORM (THM) | NOT DETECTED | 1.5 |
| 1,1,2,2-TETRACHLOROETHANE | NOT DETECTED | 0.6 |
| TETRACHLOROETHYLENE | NOT DETECTED | 1.1 |
| TOLUENE | NOT DETECTED | 0.5 |
| CHLOROBENZENE | NOT DETECTED | 0.5 |
| ETHYLBENZENE | NOT DETECTED | 0.7 |
| META-XYLENE | NOT DETECTED | 0.6 |
| ORTHO &/OR PARA-XYLENE | NOT DETECTED | 0.6 |
| 1,3-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,2-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,4-DICHLOROBENZENE | NOT DETECTED | 1.0 |

Analyst: RICHARD L. PIERCE *RP*

Roger H. Carlson, Ph.D., Director

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KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
Kansas Health & Environmental Laboratory
Organic Chemistry Laboratory
Topeka, Kansas 66620

GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037420C
Report Date: 5-23-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00039718 Program Code: ER Sample Type: WATER
Collection Site: STATE OF KS (FORMERLY BUILDERS SAND CO.) ABANDONED WELL
Collected By: KDHE-ALLDRITT/NIGHTINGALE Date: 5-15-91 Time: 1130

RESULTS OF ANALYSIS

| PURGABLE ORGANICS | Concentration (UG/L) | Reporting Limit (UG/L) |
|-------------------------------------|-------------------------|---------------------------|
| CHLOROMETHANE | NOT DETECTED | 5.0 |
| BROMOMETHANE | NOT DETECTED | 1.2 |
| VINYL CHLORIDE | NOT DETECTED | 0.8 |
| CHLOROETHANE | NOT DETECTED | 3.7 |
| DICHLOROMETHANE | NOT DETECTED | 0.9 |
| 1,1-DICHLOROETHYLENE | NOT DETECTED | 0.6 |
| 1,1-DICHLOROETHANE | NOT DETECTED | 0.5 |
| TRANS &/OR CIS 1,2-DICHLOROETHYLENE | NOT DETECTED | 0.5 |
| TRICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROETHANE | NOT DETECTED | 0.6 |
| 1,1,1-TRICHLOROETHANE | NOT DETECTED | 0.7 |
| TETRACHLOROMETHANE | NOT DETECTED | 0.7 |
| BROMODICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROPROPANE | NOT DETECTED | 0.5 |
| TRANS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.8 |
| TRICHLOROETHYLENE | NOT DETECTED | 0.6 |
| BENZENE | NOT DETECTED | 0.5 |
| DIBROMOCHLOROMETHANE (THM) | NOT DETECTED | 0.7 |
| CIS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.9 |
| 1,1,2-TRICHLOROETHANE | NOT DETECTED | 0.6 |
| BROMOFORM (THM) | NOT DETECTED | 1.5 |
| 1,1,2,2-TETRACHLOROETHANE | NOT DETECTED | 0.6 |
| TETRACHLOROETHYLENE | NOT DETECTED | 1.1 |
| TOLUENE | 0.5 | 0.5 |
| CHLOROBENZENE | NOT DETECTED | 0.5 |
| ETHYLBENZENE | NOT DETECTED | 0.7 |
| META-XYLENE | NOT DETECTED | 0.6 |
| ORTHO &/OR PARA-XYLENE | NOT DETECTED | 0.6 |
| 1,3-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,2-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,4-DICHLOROBENZENE | NOT DETECTED | 1.0 |

Analyst: RICHARD L. PIERCE *RP*
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KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
Kansas Health & Environmental Laboratory
Organic Chemistry Laboratory
Topeka, Kansas 66620

GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037430C
Report Date: 5-23-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00002648 Program Code: ER Sample Type: WATER
Collection Site: COLGATE-PALMOLIVE WELL #6A
Collected By: KDHE-CHAFFEE Date: 5-16-91 Time: 1525

RESULTS OF ANALYSIS

| PURGABLE ORGANICS | Concentration (UG/L) | Reporting Limit (UG/L) |
|-------------------------------------|-------------------------|---------------------------|
| CHLOROMETHANE | NOT DETECTED | 5.0 |
| BROMOMETHANE | NOT DETECTED | 1.2 |
| VINYL CHLORIDE | NOT DETECTED | 0.8 |
| CHLOROETHANE | NOT DETECTED | 3.7 |
| DICHLOROMETHANE | NOT DETECTED | 0.9 |
| 1,1-DICHLOROETHYLENE | NOT DETECTED | 0.6 |
| 1,1-DICHLOROETHANE | NOT DETECTED | 0.5 |
| TRANS &/OR CIS 1,2-DICHLOROETHYLENE | NOT DETECTED | 0.5 |
| TRICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROETHANE | NOT DETECTED | 0.6 |
| 1,1,1-TRICHLOROETHANE | NOT DETECTED | 0.7 |
| TETRACHLOROMETHANE | NOT DETECTED | 0.7 |
| BROMODICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROPROPANE | NOT DETECTED | 0.5 |
| TRANS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.8 |
| TRICHLOROETHYLENE | NOT DETECTED | 0.6 |
| BENZENE | 0.6 | 0.5 |
| DIBROMOCHLOROMETHANE (THM) | NOT DETECTED | 0.7 |
| CIS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.9 |
| 1,1,2-TRICHLOROETHANE | NOT DETECTED | 0.6 |
| BROMOFORM (THM) | NOT DETECTED | 1.5 |
| 1,1,2,2-TETRACHLOROETHANE | NOT DETECTED | 0.6 |
| TETRACHLOROETHYLENE | NOT DETECTED | 1.1 |
| TOLUENE | NOT DETECTED | 0.5 |
| CHLOROBENZENE | NOT DETECTED | 0.5 |
| ETHYLBENZENE | NOT DETECTED | 0.7 |
| META-XYLENE | NOT DETECTED | 0.6 |
| ORTHO &/OR PARA-XYLENE | NOT DETECTED | 0.6 |
| 1,3-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,2-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,4-DICHLOROBENZENE | NOT DETECTED | 1.0 |

Analyst: RICHARD L. PIERCE *RP*
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Kansas Health & Environmental Laboratory
Organic Chemistry Laboratory
Topeka, Kansas 66620

GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037440C
Report Date: 5-23-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00002655 Program Code: ER Sample Type: WATER
Collection Site: COLGATE-PALMOLIVE WELL #9A
Collected By: KDHE-CHAFFEE Date: 5-16-91 Time: 1433

RESULTS OF ANALYSIS

| PURGABLE ORGANICS | Concentration (UG/L) | Reporting Limit (UG/L) |
|-------------------------------------|-------------------------|---------------------------|
| CHLOROMETHANE | NOT DETECTED | 5.0 |
| BROMOMETHANE | NOT DETECTED | 1.2 |
| VINYL CHLORIDE | NOT DETECTED | 0.8 |
| CHLOROETHANE | NOT DETECTED | 3.7 |
| DICHLOROMETHANE | NOT DETECTED | 0.9 |
| 1,1-DICHLOROETHYLENE | NOT DETECTED | 0.6 |
| 1,1-DICHLOROETHANE | NOT DETECTED | 0.5 |
| TRANS &/OR CIS 1,2-DICHLOROETHYLENE | 1.0 | 0.5 |
| TRICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROETHANE | 10.1 | 0.6 |
| 1,1,1-TRICHLOROETHANE | NOT DETECTED | 0.7 |
| TETRACHLOROMETHANE | NOT DETECTED | 0.7 |
| BROMODICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROPROPANE | NOT DETECTED | 0.5 |
| TRANS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.8 |
| TRICHLOROETHYLENE | NOT DETECTED | 0.6 |
| BENZENE | 1.2 | 0.5 |
| DIBROMOCHLOROMETHANE (THM) | NOT DETECTED | 0.7 |
| CIS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.9 |
| 1,1,2-TRICHLOROETHANE | NOT DETECTED | 0.6 |
| BROMOFORM (THM) | NOT DETECTED | 1.5 |
| 1,1,2,2-TETRACHLOROETHANE | NOT DETECTED | 0.6 |
| TETRACHLOROETHYLENE | NOT DETECTED | 1.1 |
| TOLUENE | NOT DETECTED | 0.5 |
| CHLOROBENZENE | NOT DETECTED | 0.5 |
| ETHYLBENZENE | NOT DETECTED | 0.7 |
| META-XYLENE | NOT DETECTED | 0.6 |
| ORTHO &/OR PARA-XYLENE | NOT DETECTED | 0.6 |
| 1,3-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,2-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,4-DICHLOROBENZENE | NOT DETECTED | 1.0 |

Comment: TRACE LEVELS OF SEVERAL UNIDENTIFIED COMPOUNDS WERE INDICATED.

Analyst: RICHARD L. PIERCE *RP*
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Kansas Health & Environmental Laboratory
Organic Chemistry Laboratory
Topeka, Kansas 66620

GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037450C
Report Date: 5-23-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00002594 Program Code: ER Sample Type: WATER
Collection Site: MIDWEST GASES INC., 19TH & OSAGE STE, KC, KS
Collected By: KDHE-CHAFFEE Date: 5-15-91 Time: 1015

RESULTS OF ANALYSIS

| PURGABLE ORGANICS | Concentration (UG/L) | Reporting Limit (UG/L) |
|-------------------------------------|-------------------------|---------------------------|
| CHLOROMETHANE | NOT DETECTED | 5.0 |
| BROMOMETHANE | NOT DETECTED | 1.2 |
| VINYL CHLORIDE | NOT DETECTED | 0.8 |
| CHLOROETHANE | NOT DETECTED | 3.7 |
| DICHLOROMETHANE | NOT DETECTED | 0.9 |
| 1,1-DICHLOROETHYLENE | NOT DETECTED | 0.6 |
| 1,1-DICHLOROETHANE | NOT DETECTED | 0.5 |
| TRANS &/OR CIS 1,2-DICHLOROETHYLENE | NOT DETECTED | 0.5 |
| TRICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROETHANE | NOT DETECTED | 0.6 |
| 1,1,1-TRICHLOROETHANE | NOT DETECTED | 0.7 |
| TETRACHLOROMETHANE | NOT DETECTED | 0.7 |
| BROMODICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROPROPANE | NOT DETECTED | 0.5 |
| TRANS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.8 |
| TRICHLOROETHYLENE | NOT DETECTED | 0.6 |
| BENZENE | NOT DETECTED | 0.5 |
| DIBROMOCHLOROMETHANE (THM) | NOT DETECTED | 0.7 |
| CIS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.9 |
| 1,1,2-TRICHLOROETHANE | NOT DETECTED | 0.6 |
| BROMOFORM (THM) | NOT DETECTED | 1.5 |
| 1,1,2,2-TETRACHLOROETHANE | NOT DETECTED | 0.6 |
| TETRACHLOROETHYLENE | NOT DETECTED | 1.1 |
| TOLUENE | NOT DETECTED | 0.5 |
| CHLOROBENZENE | NOT DETECTED | 0.5 |
| ETHYLBENZENE | NOT DETECTED | 0.7 |
| META-XYLENE | NOT DETECTED | 0.6 |
| ORTHO &/OR PARA-XYLENE | NOT DETECTED | 0.6 |
| 1,3-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,2-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,4-DICHLOROBENZENE | NOT DETECTED | 1.0 |

Analyst: RICHARD L. PIERCE *RLP*
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Kansas Health & Environmental Laboratory
Organic Chemistry Laboratory
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GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037380C
Report Date: 5-23-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00002617 Program Code: ER--- Sample Type: WATER
Collection Site: PROCTER & GAMBLE EPI WELL #2
Collected By: KDHE-CHAFFEE/NIGHTINGALE Date: 5-14-91 Time: 1630

RESULTS OF ANALYSIS

| PURGABLE ORGANICS | Concentration (UG/L) | Reporting Limit (UG/L) |
|-------------------------------------|-------------------------|---------------------------|
| CHLOROMETHANE | NOT DETECTED | 5.0 |
| BROMOMETHANE | NOT DETECTED | 1.2 |
| VINYL CHLORIDE | NOT DETECTED | 0.8 |
| CHLOROETHANE | NOT DETECTED | 3.7 |
| DICHLOROMETHANE | NOT DETECTED | 0.9 |
| 1,1-DICHLOROETHYLENE | 36.1 | 0.6 |
| 1,1-DICHLOROETHANE | NOT DETECTED | 0.5 |
| TRANS &/OR CIS 1,2-DICHLOROETHYLENE | 12.7 | 0.5 |
| TRICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROETHANE | NOT DETECTED | 0.6 |
| 1,1,1-TRICHLOROETHANE | NOT DETECTED | 0.7 |
| TETRACHLOROMETHANE | NOT DETECTED | 0.7 |
| BROMODICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROPROPANE | NOT DETECTED | 0.5 |
| TRANS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.8 |
| TRICHLOROETHYLENE | 9.1 | 0.6 |
| BENZENE | NOT DETECTED | 0.5 |
| DIBROMOCHLOROMETHANE (THM) | NOT DETECTED | 0.7 |
| CIS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.9 |
| 1,1,2-TRICHLOROETHANE | NOT DETECTED | 0.6 |
| BROMOFORM (THM) | NOT DETECTED | 1.5 |
| 1,1,2,2-TETRACHLOROETHANE | NOT DETECTED | 0.6 |
| TETRACHLOROETHYLENE | 3.0 | 1.1 |
| TOLUENE | NOT DETECTED | 0.5 |
| CHLOROBENZENE | NOT DETECTED | 0.5 |
| ETHYLBENZENE | NOT DETECTED | 0.7 |
| META-XYLENE | NOT DETECTED | 0.6 |
| ORTHO &/OR PARA-XYLENE | NOT DETECTED | 0.6 |
| 1,3-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,2-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,4-DICHLOROBENZENE | NOT DETECTED | 1.0 |

Analyst: RICHARD L. PIERCE *ALP*

Roger H. Carlson, Ph.D., Director

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Kansas Health & Environmental Laboratory
Organic Chemistry Laboratory
Topeka, Kansas 66620

GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037400C
Report Date: 5-23-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00002587 Program Code: ER Sample Type: WATER
Collection Site: PROCTER & GAMBLE EPI WELL #1
Collected By: KDHE-CHAFFEE/NIGHTINGALE Date: 5-14-91 Time: 1320

RESULTS OF ANALYSIS

| PURGABLE ORGANICS | Concentration (UG/L) | Reporting Limit (UG/L) |
|-------------------------------------|-------------------------|---------------------------|
| CHLOROMETHANE | NOT DETECTED | 5.0 |
| BROMOMETHANE | NOT DETECTED | 1.2 |
| VINYL CHLORIDE | NOT DETECTED | 0.8 |
| CHLOROETHANE | NOT DETECTED | 3.7 |
| DICHLOROMETHANE | NOT DETECTED | 0.9 |
| 1,1-DICHLOROETHYLENE | 7.0 | 0.6 |
| 1,1-DICHLOROETHANE | NOT DETECTED | 0.5 |
| TRANS &/OR CIS 1,2-DICHLOROETHYLENE | 5.5 | 0.5 |
| TRICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROETHANE | NOT DETECTED | 0.6 |
| 1,1,1-TRICHLOROETHANE | NOT DETECTED | 0.7 |
| TETRACHLOROMETHANE | NOT DETECTED | 0.7 |
| BROMODICHLOROMETHANE (THM) | NOT DETECTED | 0.5 |
| 1,2-DICHLOROPROPANE | NOT DETECTED | 0.5 |
| TRANS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.8 |
| TRICHLOROETHYLENE | 3.2 | 0.6 |
| BENZENE | NOT DETECTED | 0.5 |
| DIBROMOCHLOROMETHANE (THM) | NOT DETECTED | 0.7 |
| CIS 1,3-DICHLOROPROPENE | NOT DETECTED | 0.9 |
| 1,1,2-TRICHLOROETHANE | NOT DETECTED | 0.6 |
| BROMOFORM (THM) | NOT DETECTED | 1.5 |
| 1,1,2,2-TETRACHLOROETHANE | NOT DETECTED | 0.6 |
| TETRACHLOROETHYLENE | NOT DETECTED | 1.1 |
| TOLUENE | NOT DETECTED | 0.5 |
| CHLOROBENZENE | NOT DETECTED | 0.5 |
| ETHYLBENZENE | NOT DETECTED | 0.7 |
| META-XYLENE | NOT DETECTED | 0.6 |
| ORTHO &/OR PARA-XYLENE | NOT DETECTED | 0.6 |
| 1,3-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,2-DICHLOROBENZENE | NOT DETECTED | 1.0 |
| 1,4-DICHLOROBENZENE | NOT DETECTED | 1.0 |

Analyst: RICHARD L. PIERCE *ALP*

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KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
Kansas Health & Environmental Laboratory
Organic Chemistry Laboratory
Topeka, Kansas 66620

PESTICIDE ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037200C
Report Date: 5-22-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00002594 Program Code: ER Sample Type: WATER
Collection Site: MIDWEST GASES INC., 19TH & OSAGE STE, KC, KS
Collected By: KDHE-CHAFFEE Date: 5-15-91 Time: 1015

RESULTS OF ANALYSIS

| PRIORITY POLLUTANT PESTICIDES | Concentration (UG/L) | Reporting Limit (UG/L) |
|----------------------------------|-------------------------|---------------------------|
| ALDRIN | NOT DETECTED | 0.025 |
| ALPHA BHC | NOT DETECTED | 0.025 |
| BETA BHC | NOT DETECTED | 0.050 |
| DELTA BHC | NOT DETECTED | 0.050 |
| GAMMA BHC | NOT DETECTED | 0.025 |
| CHLORDANE | NOT DETECTED | 0.20 |
| P,P' DDD | NOT DETECTED | 0.040 |
| P,P' DDE | NOT DETECTED | 0.020 |
| P,P' DDT | NOT DETECTED | 0.10 |
| DIELDRIN | NOT DETECTED | 0.050 |
| ENDOSULFAN I | NOT DETECTED | 0.020 |
| ENDOSULFAN II | NOT DETECTED | 0.020 |
| ENDOSULFAN SULFATE | NOT DETECTED | 0.10 |
| ENDRIN | NOT DETECTED | 0.10 |
| HEPTACHLOR | NOT DETECTED | 0.020 |
| HEPTACHLOR EPOXIDE | NOT DETECTED | 0.020 |
| TOXAPHENE | NOT DETECTED | 2.0 |
| PCB-1016 | NOT DETECTED | 0.50 |
| PCB-1221 | NOT DETECTED | 2.5 |
| PCB-1232 | NOT DETECTED | 0.50 |
| PCB-1242 | NOT DETECTED | 0.50 |
| PCB-1248 | NOT DETECTED | 0.50 |
| PCB-1254 | NOT DETECTED | 0.50 |
| PCB-1260 | NOT DETECTED | 0.50 |

Analyst: JOHN GOULD *JG*

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KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
Kansas Health & Environmental Laboratory
Organic Chemistry Laboratory
Topeka, Kansas 66620

PESTICIDE ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037170C
Report Date: 5-22-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00002655 Program Code: ER Sample Type: WATER
Collection Site: COLGATE-PALMOLIVE WELL #9A
Collected By: KDHE-CHAFFEE Date: 5-16-91 Time: 1433

RESULTS OF ANALYSIS

| PRIORITY POLLUTANT PESTICIDES | Concentration (UG/L) | Reporting Limit (UG/L) |
|----------------------------------|-------------------------|---------------------------|
| ALDRIN | NOT DETECTED | 0.025 |
| ALPHA BHC | NOT DETECTED | 0.025 |
| BETA BHC | NOT DETECTED | 0.050 |
| DELTA BHC | NOT DETECTED | 0.050 |
| GAMMA BHC | NOT DETECTED | 0.025 |
| CHLORDANE | NOT DETECTED | 0.20 |
| P,P' DDD | NOT DETECTED | 0.040 |
| P,P' DDE | NOT DETECTED | 0.020 |
| P,P' DDT | NOT DETECTED | 0.10 |
| DIELDRIN | NOT DETECTED | 0.050 |
| ENDOSULFAN I | NOT DETECTED | 0.020 |
| ENDOSULFAN II | NOT DETECTED | 0.020 |
| ENDOSULFAN SULFATE | NOT DETECTED | 0.10 |
| ENDRIN | NOT DETECTED | 0.10 |
| HEPTACHLOR | NOT DETECTED | 0.020 |
| HEPTACHLOR EPOXIDE | NOT DETECTED | 0.020 |
| TOXAPHENE | NOT DETECTED | 2.0 |
| PCB-1016 | NOT DETECTED | 0.50 |
| PCB-1221 | NOT DETECTED | 2.5 |
| PCB-1232 | NOT DETECTED | 0.50 |
| PCB-1242 | NOT DETECTED | 0.50 |
| PCB-1248 | NOT DETECTED | 0.50 |
| PCB-1254 | NOT DETECTED | 0.50 |
| PCB-1260 | NOT DETECTED | 0.50 |

Analyst: JOHN GOULD *JS*

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Kansas Health & Environmental Laboratory
Organic Chemistry Laboratory
Topeka, Kansas 66620

PESTICIDE ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037140C
Report Date: 5-22-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00002648 Program Code: ER Sample Type: WATER
Collection Site: COLGATE-PALMOLIVE WELL #6A
Collected By: KDHE-CHAFFEE Date: 5-16-91 Time: 1525

RESULTS OF ANALYSIS

| PRIORITY POLLUTANT PESTICIDES | Concentration (UG/L) | Reporting Limit (UG/L) |
|----------------------------------|-------------------------|---------------------------|
| ALDRIN | NOT DETECTED | 0.025 |
| ALPHA BHC | NOT DETECTED | 0.025 |
| BETA BHC | NOT DETECTED | 0.050 |
| DELTA BHC | NOT DETECTED | 0.050 |
| GAMMA BHC | NOT DETECTED | 0.025 |
| CHLORDANE | NOT DETECTED | 0.20 |
| P,P' DDD | NOT DETECTED | 0.040 |
| P,P' DDE | NOT DETECTED | 0.020 |
| P,P' DDT | NOT DETECTED | 0.10 |
| DIELDRIN | NOT DETECTED | 0.050 |
| ENDOSULFAN I | NOT DETECTED | 0.020 |
| ENDOSULFAN II | NOT DETECTED | 0.020 |
| ENDOSULFAN SULFATE | NOT DETECTED | 0.10 |
| ENDRIN | NOT DETECTED | 0.10 |
| HEPTACHLOR | NOT DETECTED | 0.020 |
| HEPTACHLOR EPOXIDE | NOT DETECTED | 0.020 |
| TOXAPHENE | NOT DETECTED | 2.0 |
| PCB-1016 | NOT DETECTED | 0.50 |
| PCB-1221 | NOT DETECTED | 2.5 |
| PCB-1232 | NOT DETECTED | 0.50 |
| PCB-1242 | NOT DETECTED | 0.50 |
| PCB-1248 | NOT DETECTED | 0.50 |
| PCB-1254 | NOT DETECTED | 0.50 |
| PCB-1260 | NOT DETECTED | 0.50 |

Analyst: JOHN GOULD
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GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037500C
Report Date: 5-23-91

SAMPLE COLLECTION INFORMATION

Site ID No.: Program Code: ER Sample Type: SOIL
Collection Site: NWSWNENE201125E, 04105348/INLAND CONTAINER BORING #2
Collected By: KDHE-ALLDRITT/NIGHTINGALE Date: 5-16-91 Time: 1600

RESULTS OF ANALYSIS

| PRIORITY POLLUTANT BASE NEUTRAL EXTRACTABLES | Concentration (MG/KG) | Reporting Limit (MG/KG) |
|---|--------------------------|----------------------------|
| HEXACHLOROETHANE | NOT DETECTED | 1.0 |
| BIS(2-CHLOROETHYL) ETHER | NOT DETECTED | 1.0 |
| BIS(2-CHLOROISOPROPYL) ETHER | NOT DETECTED | 1.0 |
| HEXACHLOROBUTADIENE | NOT DETECTED | 1.0 |
| 1,2,4-TRICHLOROBENZENE | NOT DETECTED | 1.0 |
| NAPHTHALENE | NOT DETECTED | 1.0 |
| BIS(2-CHLOROETHOXY) METHANE | NOT DETECTED | 1.0 |
| 2-CHLORONAPHTHALENE | NOT DETECTED | 1.0 |
| ACENAPHTHYLENE | NOT DETECTED | 1.0 |
| ACENAPHTHENE | NOT DETECTED | 1.0 |
| DIMETHYL PHTHALATE | NOT DETECTED | 1.0 |
| 2,6-DINITROTOLUENE | NOT DETECTED | 1.0 |
| FLUORENE | NOT DETECTED | 1.0 |
| 4-CHLOROPHENYL PHENYL ETHER | NOT DETECTED | 1.0 |
| 2,4-DINITROTOLUENE | NOT DETECTED | 1.0 |
| DIETHYL PHTHALATE | NOT DETECTED | 1.0 |
| HEXACHLOROBENZENE | NOT DETECTED | 1.0 |
| 4-BROMOPHENYL PHENYL ETHER | NOT DETECTED | 1.0 |
| PHENANTHRENE &/OR ANTHRACENE | NOT DETECTED | 1.0 |
| DI-N-BUTYL PHTHALATE | NOT DETECTED | 1.0 |
| FLUORANTHENE | NOT DETECTED | 1.0 |
| PYRENE | NOT DETECTED | 1.0 |
| BUTYL BENZYL PHTHALATE | NOT DETECTED | 1.0 |
| BIS(2-ETHYLHEXYL) PHTHALATE | NOT DETECTED | 5.0 |
| CHRYSENE &/OR BENZO(A)ANTHRACENE | NOT DETECTED | 1.0 |
| DI-N-OCTYL PHTHALATE | NOT DETECTED | 5.0 |
| BENZO(B) &/OR (K) >FLUORANTHENE | NOT DETECTED | 1.0 |
| BENZO(A)PYRENE | NOT DETECTED | 1.0 |
| INDENO(1,2,3-C,D)PYRENE | NOT DETECTED | 1.0 |
| DIBENZO(A,H)ANTHRACENE | NOT DETECTED | 1.0 |
| BENZO(G,H,I)PERYLENE | NOT DETECTED | 1.0 |

Comment: THE ABOVE RESULTS AND REPORTING LEVELS ARE ON A DRY WEIGHT BASIS.

Analyst: DENNIS L. DOBSON
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KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
Kansas Health & Environmental Laboratory
Organic Chemistry Laboratory
Topeka, Kansas 66620

GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037150C
Report Date: 5-29-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00002648 Program Code: ER Sample Type: WATER
Collection Site: COLGATE-PALMOLIVE WELL #6A
Collected By: KDHE-CHAFFEE Date: 5-16-91 Time: 1525

RESULTS OF ANALYSIS

| PRIORITY POLLUTANT BASE NEUTRAL EXTRACTABLES | Concentration (UG/L) | Reporting Limit (UG/L) |
|---|-------------------------|---------------------------|
| HEXACHLOROETHANE | NOT DETECTED | 2.0 |
| BIS(2-CHLOROETHYL) ETHER | NOT DETECTED | 2.0 |
| BIS(2-CHLOROISOPROPYL) ETHER | NOT DETECTED | 2.0 |
| HEXACHLOROBUTADIENE | NOT DETECTED | 2.0 |
| 1,2,4-TRICHLOROBENZENE | NOT DETECTED | 2.0 |
| NAPHTHALENE | NOT DETECTED | 2.0 |
| BIS(2-CHLOROETHOXY) METHANE | NOT DETECTED | 2.0 |
| 2-CHLORONAPHTHALENE | NOT DETECTED | 2.0 |
| ACENAPHTHYLENE | NOT DETECTED | 2.0 |
| ACENAPHTHENE | NOT DETECTED | 2.0 |
| DIMETHYL PHTHALATE | NOT DETECTED | 2.0 |
| 2,6-DINITROTOLUENE | NOT DETECTED | 2.0 |
| FLUORENE | NOT DETECTED | 2.0 |
| 4-CHLOROPHENYL PHENYL ETHER | NOT DETECTED | 2.0 |
| 2,4-DINITROTOLUENE | NOT DETECTED | 2.0 |
| DIETHYL PHTHALATE | NOT DETECTED | 2.0 |
| HEXACHLOROBENZENE | NOT DETECTED | 2.0 |
| 4-BROMOPHENYL PHENYL ETHER | NOT DETECTED | 2.0 |
| PHENANTHRENE &/OR ANTHRACENE | NOT DETECTED | 2.0 |
| DI-N-BUTYL PHTHALATE | NOT DETECTED | 2.0 |
| FLUORANTHENE | NOT DETECTED | 2.0 |
| PYRENE | NOT DETECTED | 2.0 |
| BUTYL BENZYL PHTHALATE | NOT DETECTED | 2.0 |
| BIS(2-ETHYLHEXYL) PHTHALATE | NOT DETECTED | 10.0 |
| CHRYSENE &/OR BENZO(A) ANTHRACENE | NOT DETECTED | 2.0 |
| DI-N-OCTYL PHTHALATE | NOT DETECTED | 10.0 |
| BENZO(B) &/OR (K) FLUORANTHENE | NOT DETECTED | 2.0 |
| BENZO(A) PYRENE | NOT DETECTED | 2.0 |
| INDENO(1,2,3-C,D) PYRENE | NOT DETECTED | 2.0 |
| DIBENZO(A,H) ANTHRACENE | NOT DETECTED | 2.0 |
| BENZO(G,H,I) PERYLENE | NOT DETECTED | 2.0 |

Analyst: DENNIS L. DOBSON
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Kansas Health & Environmental Laboratory
Organic Chemistry Laboratory
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GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037210C
Report Date: 5-30-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00002594 Program Code: ER Sample Type: WATER
Collection Site: MIDWEST GASES INC., 19TH & OSAGE STE, KC, KS
Collected By: KDHE-CHAFFEE Date: 5-15-91 Time: 1015

RESULTS OF ANALYSIS

| PRIORITY POLLUTANT BASE NEUTRAL EXTRACTABLES | Concentration (UG/L) | Reporting Limit (UG/L) |
|---|-------------------------|---------------------------|
| HEXACHLOROETHANE | NOT DETECTED | 2.0 |
| BIS(2-CHLOROETHYL) ETHER | NOT DETECTED | 2.0 |
| BIS(2-CHLOROISOPROPYL) ETHER | NOT DETECTED | 2.0 |
| HEXACHLOROBUTADIENE | NOT DETECTED | 2.0 |
| 1,2,4-TRICHLOROBENZENE | NOT DETECTED | 2.0 |
| NAPHTHALENE | NOT DETECTED | 2.0 |
| BIS(2-CHLOROETHOXY) METHANE | NOT DETECTED | 2.0 |
| 2-CHLORONAPHTHALENE | NOT DETECTED | 2.0 |
| ACENAPHTHYLENE | NOT DETECTED | 2.0 |
| ACENAPHTHENE | NOT DETECTED | 2.0 |
| DIMETHYL PHTHALATE | NOT DETECTED | 2.0 |
| 2,6-DINITROTOLUENE | NOT DETECTED | 2.0 |
| FLUORENE | NOT DETECTED | 2.0 |
| 4-CHLOROPHENYL PHENYL ETHER | NOT DETECTED | 2.0 |
| 2,4-DINITROTOLUENE | NOT DETECTED | 2.0 |
| DIETHYL PHTHALATE | NOT DETECTED | 2.0 |
| HEXACHLOROBENZENE | NOT DETECTED | 2.0 |
| 4-BROMOPHENYL PHENYL ETHER | NOT DETECTED | 2.0 |
| PHENANTHRENE &/OR ANTHRACENE | NOT DETECTED | 2.0 |
| DI-N-BUTYL PHTHALATE | NOT DETECTED | 2.0 |
| FLUORANTHENE | NOT DETECTED | 2.0 |
| PYRENE | NOT DETECTED | 2.0 |
| BUTYL BENZYL PHTHALATE | NOT DETECTED | 2.0 |
| BIS(2-ETHYLHEXYL) PHTHALATE | NOT DETECTED | 10.0 |
| CHRYSENE &/OR BENZO(A) ANTHRACENE | NOT DETECTED | 2.0 |
| DI-N-OCTYL PHTHALATE | NOT DETECTED | 10.0 |
| BENZO(B) &/OR (K) FLUORANTHENE | NOT DETECTED | 2.0 |
| BENZO(A) PYRENE | NOT DETECTED | 2.0 |
| INDENO(1,2,3-C,D) PYRENE | NOT DETECTED | 2.0 |
| DIBENZO(A,H) ANTHRACENE | NOT DETECTED | 2.0 |
| BENZO(G,H,I) PERYLENE | NOT DETECTED | 2.0 |

Analyst: DENNIS L. DOBSON
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Kansas Health & Environmental Laboratory
Organic Chemistry Laboratory
Topeka, Kansas 66620

GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037180C
Report Date: 5-29-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00002655 Program Code: ER Sample Type: WATER
Collection Site: COLGATE-PALMOLIVE WELL #9A
Collected By: KDHE-CHAFFEE Date: 5-16-91 Time: 1433

RESULTS OF ANALYSIS

| PRIORITY POLLUTANT BASE NEUTRAL EXTRACTABLES | Concentration (UG/L) | Reporting Limit (UG/L) |
|---|-------------------------|---------------------------|
| HEXACHLOROETHANE | NOT DETECTED | 2.0 |
| BIS(2-CHLOROETHYL) ETHER | NOT DETECTED | 2.0 |
| BIS(2-CHLOROISOPROPYL) ETHER | NOT DETECTED | 2.0 |
| HEXACHLOROBUTADIENE | NOT DETECTED | 2.0 |
| 1,2,4-TRICHLOROBENZENE | NOT DETECTED | 2.0 |
| NAPHTHALENE | NOT DETECTED | 2.0 |
| BIS(2-CHLOROETHOXY) METHANE | NOT DETECTED | 2.0 |
| 2-CHLORONAPHTHALENE | NOT DETECTED | 2.0 |
| ACENAPHTHYLENE | NOT DETECTED | 2.0 |
| ACENAPHTHENE | NOT DETECTED | 2.0 |
| DIMETHYL PHTHALATE | NOT DETECTED | 2.0 |
| 2,6-DINITROTOLUENE | NOT DETECTED | 2.0 |
| FLUORENE | NOT DETECTED | 2.0 |
| 4-CHLOROPHENYL PHENYL ETHER | NOT DETECTED | 2.0 |
| 2,4-DINITROTOLUENE | NOT DETECTED | 2.0 |
| DIETHYL PHTHALATE | NOT DETECTED | 2.0 |
| HEXACHLOROBENZENE | NOT DETECTED | 2.0 |
| 4-BROMOPHENYL PHENYL ETHER | NOT DETECTED | 2.0 |
| PHENANTHRENE &/OR ANTHRACENE | NOT DETECTED | 2.0 |
| DI-N-BUTYL PHTHALATE | NOT DETECTED | 2.0 |
| FLUORANTHENE | NOT DETECTED | 2.0 |
| PYRENE | NOT DETECTED | 2.0 |
| BUTYL BENZYL PHTHALATE | NOT DETECTED | 2.0 |
| BIS(2-ETHYLHEXYL) PHTHALATE | NOT DETECTED | 10.0 |
| CHRYSENE &/OR BENZO(A) ANTHRACENE | NOT DETECTED | 2.0 |
| DI-N-OCTYL PHTHALATE | NOT DETECTED | 10.0 |
| BENZO(B) &/OR (K) >FLUORANTHENE | NOT DETECTED | 2.0 |
| BENZO(A) PYRENE | NOT DETECTED | 2.0 |
| INDENO(1,2,3-C,D) PYRENE | NOT DETECTED | 2.0 |
| DIBENZO(A,H) ANTHRACENE | NOT DETECTED | 2.0 |
| BENZO(G,H,I) PERYLENE | NOT DETECTED | 2.0 |

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Organic Chemistry Laboratory
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GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037220C
Report Date: 5-30-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00002594 Program Code: ER Sample Type: WATER
Collection Site: MIDWEST GASES INC., 19TH & OSAGE STE, KC, KS
Collected By: KDHE-CHAFFEE Date: 5-15-91 Time: 1015

RESULTS OF ANALYSIS

| PRIORITY POLLUTANT | Concentration (UG/L) | Reporting Limit (UG/L) |
|-----------------------|-------------------------|---------------------------|
| ACID EXTRACTABLES | | |
| ORTHO-CHLOROPHENOL | NOT DETECTED | 2.0 |
| 2-NITROPHENOL | NOT DETECTED | 2.0 |
| PHENOL | NOT DETECTED | 2.0 |
| 2,4-DIMETHYLPHENOL | NOT DETECTED | 2.0 |
| 2,4-DICHLOROPHENOL | NOT DETECTED | 2.0 |
| 2,4,6-TRICHLOROPHENOL | NOT DETECTED | 2.0 |
| 4-CHLORO-M-CRESOL | NOT DETECTED | 2.0 |
| 2,4-DINITROPHENOL | NOT DETECTED | 50.0 |
| 4,6-DINITRO-O-CRESOL | NOT DETECTED | 10.0 |
| PENTACHLOROPHENOL | NOT DETECTED | 10.0 |
| 4-NITROPHENOL | NOT DETECTED | 10.0 |
| BENZOIC ACID | 3.7 | |

Note: 2,6-Dichlorophenol if present, is calculated as 2,4-Dichlorophenol.

Comment: BENZOIC ACID IS NOT A PRIORITY POLLUTANT COMPOUND.

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GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037160C
Report Date: 5-29-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00002648 Program Code: ER Sample Type: WATER
Collection Site: COLGATE-PALMOLIVE WELL #6A
Collected By: KDHE-CHAFFEE Date: 5-16-91 Time: 1525

RESULTS OF ANALYSIS

| PRIORITY POLLUTANT | Concentration (UG/L) | Reporting Limit (UG/L) |
|-----------------------|-------------------------|---------------------------|
| ACID EXTRACTABLES | | |
| ORTHO-CHLOROPHENOL | NOT DETECTED | 2.0 |
| 2-NITROPHENOL | NOT DETECTED | 2.0 |
| PHENOL | NOT DETECTED | 2.0 |
| 2,4-DIMETHYLPHENOL | NOT DETECTED | 2.0 |
| 2,4-DICHLOROPHENOL | NOT DETECTED | 2.0 |
| 2,4,6-TRICHLOROPHENOL | NOT DETECTED | 2.0 |
| 4-CHLORO-M-CRESOL | NOT DETECTED | 2.0 |
| 2,4-DINITROPHENOL | NOT DETECTED | 50.0 |
| 4,6-DINITRO-O-CRESOL | NOT DETECTED | 10.0 |
| PENTACHLOROPHENOL | NOT DETECTED | 10.0 |
| 4-NITROPHENOL | NOT DETECTED | 10.0 |
| BENZOIC ACID | 3.3 | |

Note: 2,6-Dichlorophenol if present, is calculated as 2,4-Dichlorophenol.

Analyst: DENNIS L. DOBSON

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GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS.. 66620

Lab Number: 1037190C
Report Date: 5-29-91

SAMPLE COLLECTION INFORMATION

Site ID No.: 00002655 Program Code: ER Sample Type: WATER
Collection Site: COLGATE-PALMOLIVE WELL #9A
Collected By: KDHE-CHAFFEE Date: 5-16-91 Time: 1433

RESULTS OF ANALYSIS

| PRIORITY POLLUTANT | Concentration (UG/L) | Reporting Limit (UG/L) |
|-----------------------|-------------------------|---------------------------|
| ACID EXTRACTABLES | | |
| ORTHO-CHLOROPHENOL | NOT DETECTED | 2.0 |
| 2-NITROPHENOL | NOT DETECTED | 2.0 |
| PHENOL | NOT DETECTED | 2.0 |
| 2,4-DIMETHYLPHENOL | NOT DETECTED | 2.0 |
| 2,4-DICHLOROPHENOL | NOT DETECTED | 2.0 |
| 2,4,6-TRICHLOROPHENOL | NOT DETECTED | 2.0 |
| 4-CHLORO-M-CRESOL | NOT DETECTED | 2.0 |
| 2,4-DINITROPHENOL | NOT DETECTED | 50.0 |
| 4,6-DINITRO-O-CRESOL | NOT DETECTED | 10.0 |
| PENTACHLOROPHENOL | NOT DETECTED | 10.0 |
| 4-NITROPHENOL | NOT DETECTED | 10.0 |
| BENZOIC ACID | 2.8 | |

Note: 2,6-Dichlorophenol if present, is calculated as 2,4-Dichlorophenol.

Analyst: DENNIS L. DOBSON

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GC/MS ANALYSIS REPORT

Report To: PAM CHAFFEE-BER
Address: FORBES BLDG. 740, TOPEKA, KS. 66620

Lab Number: 1037510C
Report Date: 5-23-91

SAMPLE COLLECTION INFORMATION

Site ID No.: Program Code: ER Sample Type: SOIL
Collection Site: NWSWNE201125E, 04105348/INLAND CONTAINER BORING #2
Collected By: KDHE-ALLDRITT/NIGHTINGALE Date: 5-16-91 Time: 1600

RESULTS OF ANALYSIS

| PRIORITY POLLUTANT | Concentration (MG/KG) | Reporting Limit (MG/KG) |
|-----------------------|--------------------------|----------------------------|
| ACID EXTRACTABLES | NOT DETECTED | 1.0 |
| ORTHO-CHLOROPHENOL | NOT DETECTED | 1.0 |
| 2-NITROPHENOL | NOT DETECTED | 1.0 |
| PHENOL | NOT DETECTED | 1.0 |
| 2,4-DIMETHYLPHENOL | NOT DETECTED | 1.0 |
| 2,4-DICHLOROPHENOL | NOT DETECTED | 1.0 |
| 2,4,6-TRICHLOROPHENOL | NOT DETECTED | 1.0 |
| 4-CHLORO-M-CRESOL | NOT DETECTED | 1.0 |
| 2,4-DINITROPHENOL | NOT DETECTED | 25.0 |
| 4,6-DINITRO-O-CRESOL | NOT DETECTED | 5.0 |
| PENTACHLOROPHENOL | NOT DETECTED | 5.0 |
| 4-NITROPHENOL | NOT DETECTED | 5.0 |

Note: 2,6-Dichlorophenol if present, is calculated as 2,4-Dichlorophenol.

Comment: THE ABOVE RESULTS AND REPORTING LEVELS ARE ON A DRY WEIGHT BASIS.

Analyst: DENNIS L. DOBSON

Roger H. Carlson, Ph.D., Director

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